ASBPE
Magazine of the Year
2006

OPEN SEASON ON JAVA
Sun starts to release pieces of Java as open-source code. **PAGE 8**

VISTA: PROS AND CONS
Michael Gartenberg says Aero Glass is slick, but the Vista migration will be costly. **PAGE 26**

COMPUTERWORLD®

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NOVEMBER 13, 2006 ▪ VOL. 40 ▪ NO. 46 ▪ $5/COPY

Reliability a Tossup In E-voting Exit Poll

Technology causes chaos in some spots but few problems in others

BY MARC L. SONGINI

The jury is still out on the performance of e-voting systems throughout the country in last week's midterm elections, according to officials and technical experts interviewed during and after the vote.

The prospect of widespread use of DREs, or direct recording electronic machines, most of which are touch-screen systems, had caused considerable concern about the possibility of fraud, hacking or technical glitches.

But in the days after Tuesday's elections, it remained unclear to what degree those fears may have been realized.

There were scattered reports of technical or procedural problems that led to difficulties with either registration or voting in Colorado, Texas, Florida, Utah

E-voting, page 12

INSIDE
Observers disagree on the cause of "vote flipping" problems.
PAGE 14

Protecting Data Becomes Top Security Priority for IT

Focus shifts from network defenses to sensitive info

BY JAIKUMAR VIJAYAN
ORLANDO

Regulatory requirements and increasing consumer concerns about the exposure of personal information are making the addition of data-level security controls a top priority for IT managers, according to attendees at the Computer Security Institute's annual conference.

Executives from companies and government agencies said here last week that after focusing for years on installing technologies such as firewalls and intrusion-detection systems to better secure their networks, they are rushing to provide stronger protections for the data in their systems.

"The data now matters above everything else," said John Ceraolo, director of infor-

Data Security, page 64

NEWSPAPER

The Lucky Ones.

COMPUTERWORLD
SALARY SURVEY

For most IT workers, pay raises have stalled out at around 3.1%, according to the nearly 15,000 who took part in Computerworld's 20th Annual Salary Survey. But for those with sought-after Web skills, employers are starting to loosen the purse strings.

PAGE 41

ONLINE EXCLUSIVE

IS YOUR SALARY ON PAR WITH WHAT YOUR PEERS ARE MAKING?

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WHAT THEY EARN

$175,129	+4.2%	CIO/vice president of IT
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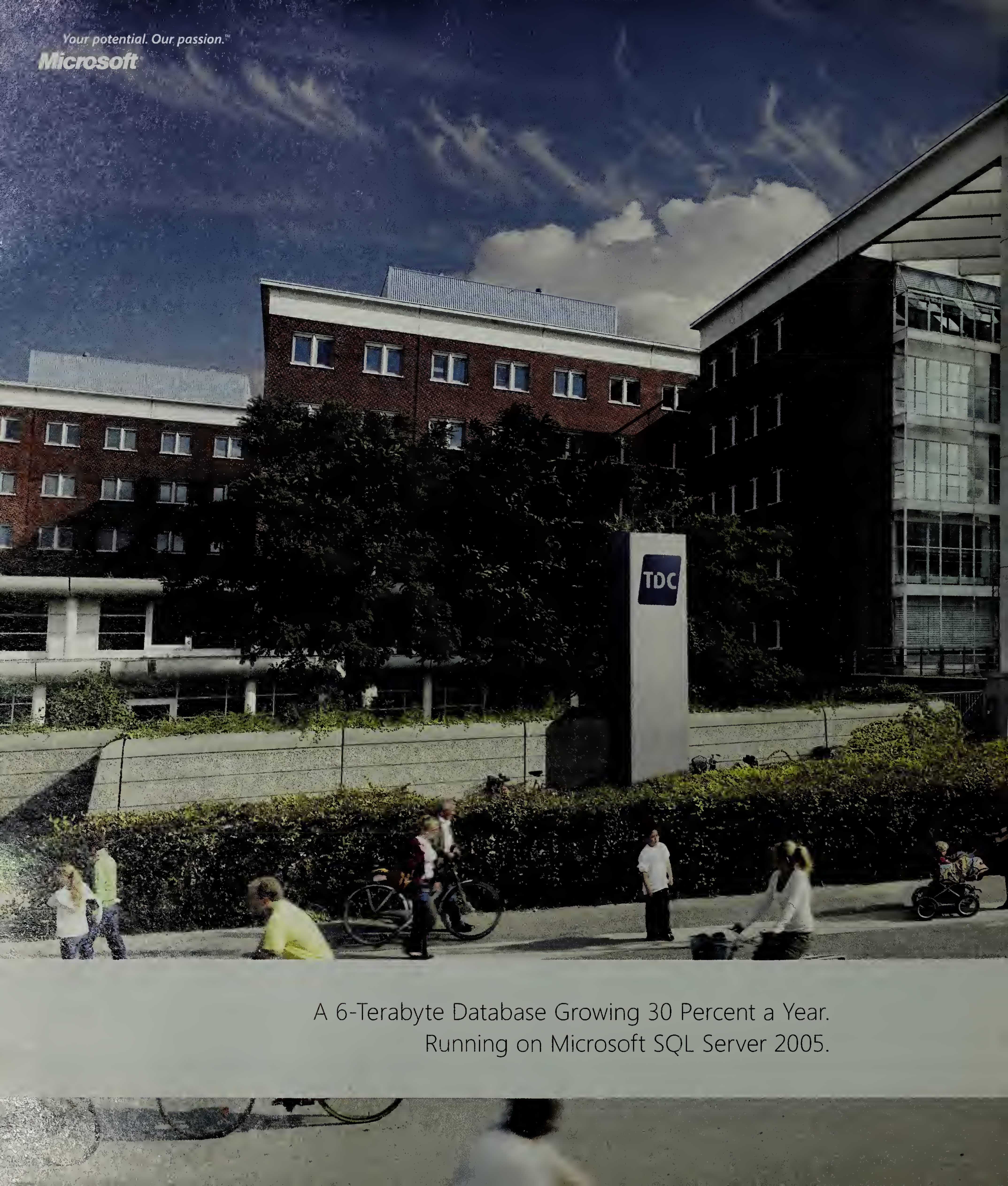
$68,555	+2.6%	Programmer/analyst

NOTE: DOLLAR AMOUNTS ARE AVERAGE TOTAL COMPENSATION. PERCENTAGES ARE AVERAGES COMPARED WITH 2005 CALCULATED FIGURES.

ILLUSTRATION BY RICHARD LILLASH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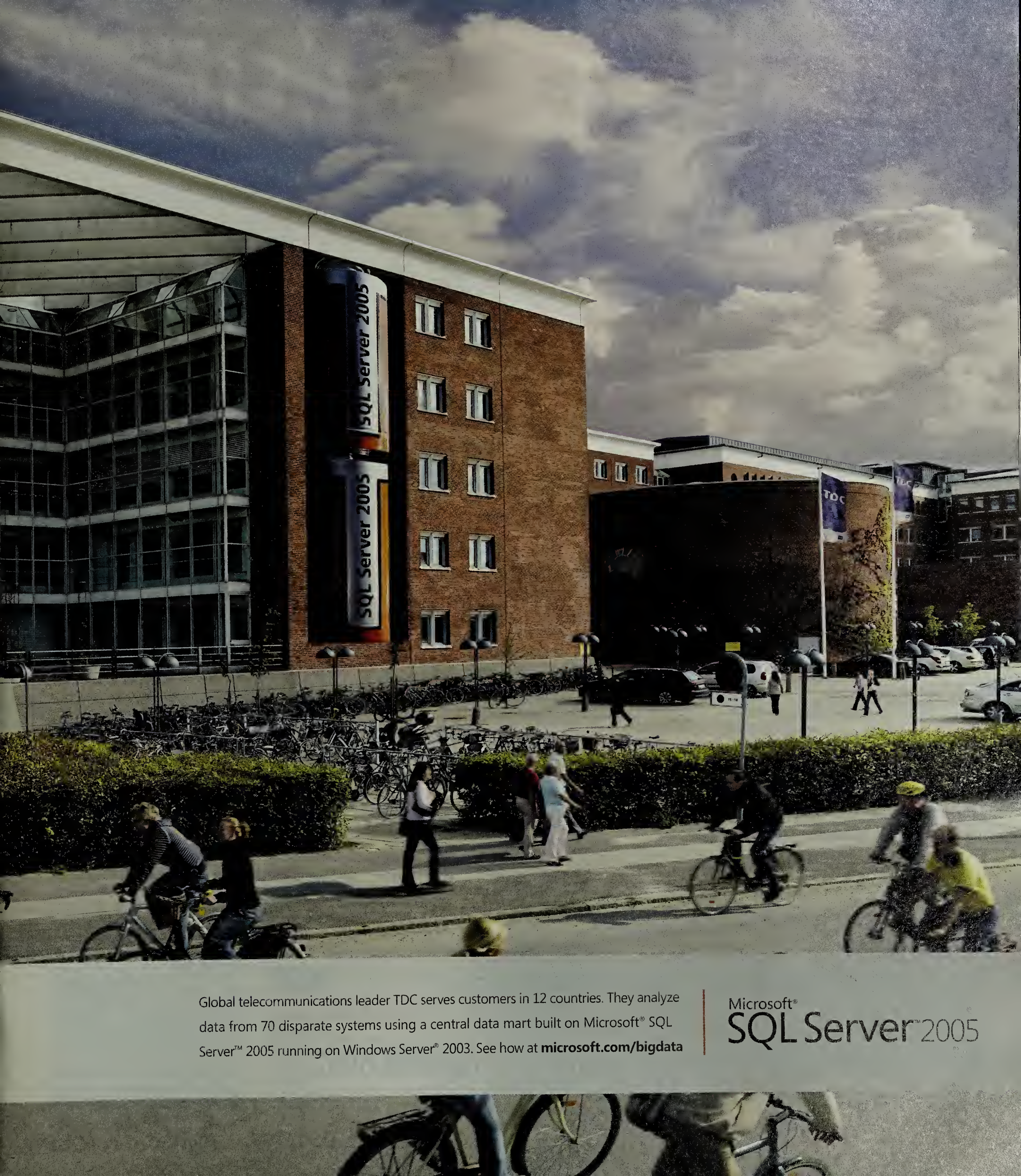

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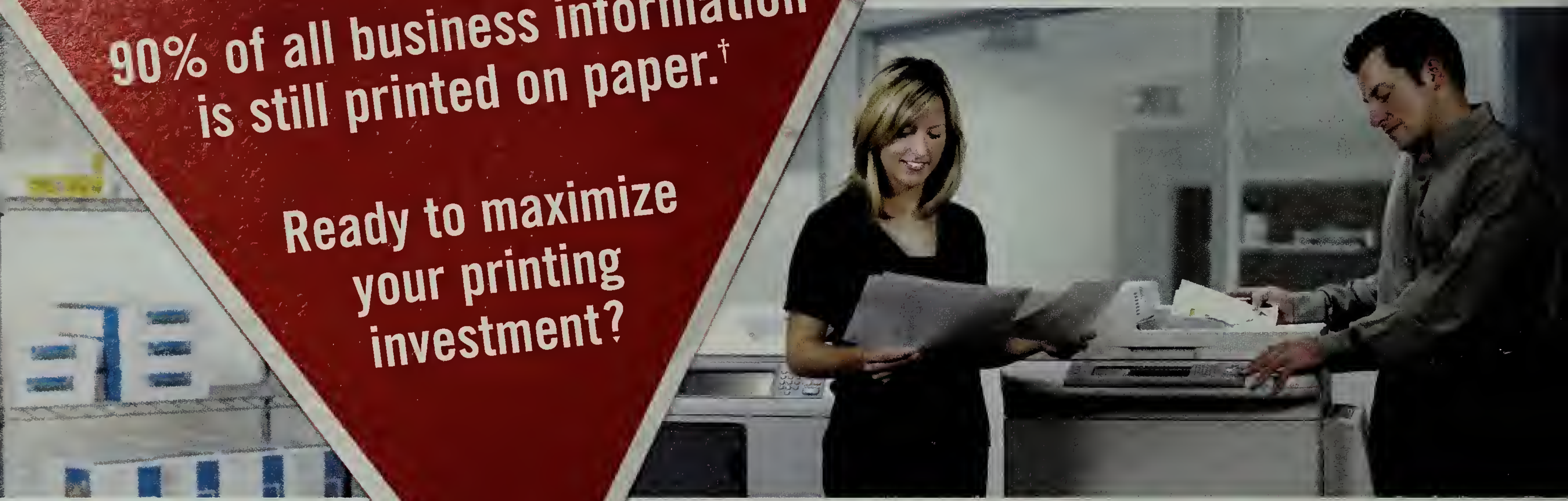

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LEXMARK FUJITSU RICOH

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11.13.06

Making the PC Connection

In the Technology section: New services such as GoToMyPC and LogMeIn — used instead of VPNs — are making remote PC access easier for IT support staffers and users alike. **Page 30**

Consortium for a Cure

In the Technology section: The National Cancer Institute developed an open-source, open-access information network to speed progress on cancer research and care. The grid computing project was named a *Computerworld* Honors Program award winner this year. **Page 36**

NEWS

6 **Companies are gaining** enough user buy-in for their business intelligence systems to make the technology a strategic asset.

8 **Sun follows through** on its promise to make pieces of Java available to the open-source community.

8 **A health care provider** signs a $300 million contract with Alcatel for a converged IP network.

16 **VMware gets** more competition from Microsoft and open-source virtualization vendors — and some of its users are glad.

22 **Global Dispatches:** The top IT exec at an Australian TV network is resigning following a shift of IT budgeting responsibility to the company's CFO.

24 **Q&A: Bill Hilf**, a Microsoft exec, discusses the vendor's open-source plans and how criticism of an agreement to share technical info with Sun helped shape its recent deal with Novell.

64 **Q&A: Kevin Kline**, who heads the user group for Microsoft's SQL Server database, says most companies have yet to make "a strong commitment" to the year-old SQL Server 2005 release.

ONLINE

Windows Vista A to Z

We've gathered *Computerworld*'s best Vista coverage, from in-depth, hands-on reviews to stories about the hot issues surrounding the OS. Check back often for updates. **www.computerworld.com/software**

OPINIONS

I'M NOT A NUMBER! I'M A FREE MAN!
INVOICE
I'M SORRY. DID YOU SAY SOMETHING?
WE'RE HAPPY TO HELP
YOU PAY YOUR BILL!

10 **On the Mark: Mark Hall** reports on a vendor whose software could help companies send out bills that treat customers as more than an invoice number.

26 **Don Tennant** recognizes only one way that chance can play a role in determining how much IT workers are paid: whether you were born male or female.

26 **Michael Gartenberg** weighs the pros and cons of Windows Vista from the perspective of IT.

38 **Bruce Hoard** says you can avoid getting ransom notes from cybercriminals by deploying robust security systems.

66 **Frankly Speaking: Frank Hayes** notes that Kaiser Permanente had a CEO, CIO and project supervisor who looked like the future of IT. But they brought Kaiser what appear to be sweetheart deals, coverups and bad publicity.

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COMPUTERWORLD
SALARY SURVEY

The Lucky Ones

Pay raises for most IT workers kicked up just 3.1% again this year, according to **Computerworld's 20th Annual Salary Survey.** But some with the hottest Web skills snared above-average raises. Also, find select compensation figures broken out for male and female IT workers. One IT career expert says if the disparity isn't corrected soon, women might leave the field in droves.

Opinion: IT workers and corporate America recognize that they need each other but aren't certain that they're ready to trust again after being burned, says columnist Paul Glen. **PAGE 50**

Charts and Data Points: Find salary information for 30 IT job titles, plus data broken out by region and company size. Also, see how we conducted this year's survey. **PAGE 52**

Opinion: The frozen job market is starting to melt, says columnist Johanna Rothman. She offers advice for IT hiring managers starting to feel the heat. **PAGE 58**

ONLINE EXCLUSIVES

MORE MONEY, PLEASE: Need advice about asking for a raise? Submit your question on our Web site. Career expert Johanna Rothman will be answering selected queries online all this week. **www.computerworld.com/06/salaries**

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ILLUSTRATION BY RICHARD LILLASH

AT DEADLINE

CIO Resigns From Kaiser Health Plan

Cliff Dodd resigned last week as CIO at Kaiser Foundation Health Plan/Hospitals. Bruce Turksta, vice president and program director of HealthConnect, was named interim CIO. The company declined to say whether the resignation is related to a memo a Kaiser worker sent to all employees that criticized a $4 billion electronic health records management system from Epic Systems Corp. that was rolled out in 2004.

Utah Man Pleads Guilty in Piracy Case

The operator of a Web site that sold software from several vendors has pleaded guilty to one count of criminal copyright infringement, said the U.S. Department of Justice. Ronnie Knott of Salt Lake City will be sentenced Feb. 23 in a Virginia federal court. Knott faces five years in prison and a $250,000 fine for providing subscriber access to software from Microsoft Corp., Symantec Corp. and others.

Microsoft to Release Windows Patches

Microsoft will release six groups of security patches tomorrow that fix flaws in the Windows operating system and the company's XML parser. Security experts said hackers have posted code showing how a flaw in the parser could be exploited to run unauthorized programs on a PC. Microsoft did not disclose whether this flaw will be fixed.

Motorola Buys Wireless Tech Firm

Motorola Inc. has agreed to acquire Good Technology Inc., a maker of wireless messaging, handheld-security and data access products. Terms of the deal, expected to close early next year, were not disclosed. The acquired firm will be part of Motorola's mobile devices unit. Motorola currently uses Good's Mobile Messaging technology on the Motorola Q smart phone.

BI Becoming Strategic Corporate Asset

IT must gain user buy-in, expand capabilities of tools, panel says

BY HEATHER HAVENSTEIN
SAN FRANCISCO

BUSINESS intelligence technology is evolving from a tactical tool to a strategic asset as many companies look to it to help bolster enterprise operations, according to a panel of users at the Business Objects SA user conference here last week.

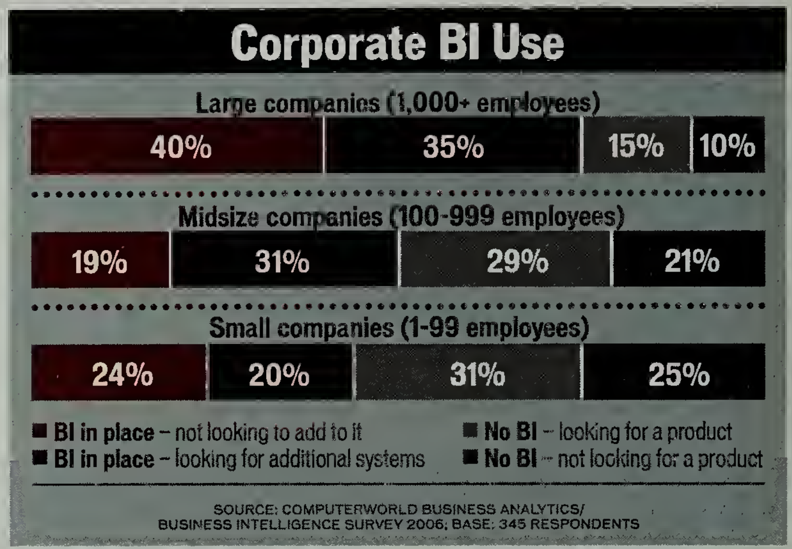
But making that shift requires user buy-in and an ability to offer BI capabilities to growing numbers of workers, the panel members agreed.

Jim Young, director of the information services group at Allstate Insurance Co. in Northbrook, Ill., said his company is looking to expand its use of BI to employees who work directly with customers.

About 33,000 Allstate workers already use BI tools from Business Objects to detect and analyze fraud, determine prices, process claims and manage the insurer's adjuster workforce, he said.

Now, Allstate is working to incorporate BI data into the business processes of employees who communicate with customers through telephone or online call centers or in person, Young said.

"We've got the data, [and] we need to mine that data and get it into the hands of people who can make some good decisions about how to cross-sell our products," he said. "Historically, we have done a great job of implementing BI somewhat tactically. Now, the opportunity is to start to bring together data from all the disparate parts of the company."


Corporate BI Use

SOURCE: COMPUTERWORLD BUSINESS ANALYTICS/ BUSINESS INTELLIGENCE SURVEY 2006; BASE: 345 RESPONDENTS

Allstate gained user buy-in for its new BI plan after putting together a "road show" to let key IT and business users know how it would work.

"We needed to make sure there weren't other initiatives going on in the company that would be derailed by our project," Young said. "We started to bring in key contacts from different development groups and negotiate timelines."

Douglas Chambers, administrator of the Office of IT Applications in the Georgia Department of Transportation in Atlanta, said 200 workers and managers at the agency are currently using Business Objects dashboards to monitor ongoing projects.

During the first part of 2007, the department will roll out the dashboards to an additional 2,500 users, he added.

"The dashboards allow upper management to drill down and see if a project is in trouble," Chambers said. "They can see exactly what is holding that project up. [The BI tools] have made the folks at the DOT much more aware of how . . . they directly affect those projects being delivered."

Jonathan Rothman, director of data management at Emergency Medical Associates in Livingston, N.J., said the group practice of 250 emergency room physicians invested in BI tools after the Sept. 11, 2001, terrorist attacks.

The company uses the tools to identify potential disease outbreaks based on the symptoms of patients who come into hospital emergency rooms where members of the group practice. "Without BI, we couldn't have done it," Rothman said.

Nicholas Berg, senior manager of global business intelligence at Seagate Technology LLC in Scotts Valley, Calif., said his company now has three separate global production versions of Business Objects software in place — including a system used at Maxtor Corp. prior to its acquisition by Seagate in May.

The company plans to replace the separate versions and run the new Release 2 of Business Objects XI throughout the company sometime next year, he said.

Berg did suggest that Business Objects add guided analysis tools in a future version of the BI tool set. Such tools suggest solutions for problems that the BI software discovers — an important feature for companies such as Seagate, whose user base includes power users and novices.

"We need tools [for] that user who doesn't know what the next step is . . . to be able to guide them through to some recommended actions," Berg said. ◗

Business Objects Updates BI Suite

SAN FRANCISCO

BUSINESS OBJECTS unveiled an update to its business intelligence tool set at its user conference here last week.

The Business Objects XI Release 2 Productivity Suite, slated to ship during the first half of next year, is designed to make it easier for business users to access analysis and reports needed to perform daily tasks. Pricing was not disclosed.

The suite will be available as an add-on to existing XI versions, said John Schwarz, CEO of Business Objects. The updated version includes improved search capabilities, new visualization tools and a faster online analytical processing client, he added. The new search capabilities can be used to perform a keyword search to quickly retrieve relevant information from reports and dashboards, Schwarz said.

Hal Siegel, data warehouse project manager at Pratt & Whitney Rocketdyne Inc. in Canoga Park, Calif., said the search capabilities could be a boon to the company's 300 Business Objects users, who often can't find data they are seeking.

Using the new search capability, he said, "you can ask a question, and no matter where it is – in a database, file servers or anywhere across the company – you can get it."

Rocketdyne, which manufactures rocket engines, uses Business Objects software to analyze cost schedules and to ensure that engines are delivered on schedule, Siegel said.

Jeff Pelletier, senior IT manager at Cingular Wireless LLC in Atlanta, said users there are happy with the data dictionaries his company created for the current Business Objects version. "We're not as comfortable with the new search features coming out," he said.

Dan Vesset, an analyst at market research company IDC, said the new search tool is aimed at allowing Business Objects users to find both BI content and external content using the BI tools. However, he noted that search results only provide a view into past performance "without support for evaluating alternative actions or analyzing the impact of a decision."

– HEATHER HAVENSTEIN

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Sun Set to Part With Java's Source Code

Users' reactions mixed: Some welcome access to code; others fear code forking

BY HEATHER HAVENSTEIN

SUN MICROSYSTEMS Inc. this week is set to make significant chunks of the Java language freely available, making good on its promise in May to open the source code of the technology.

Sun CEO Jonathan Schwartz is slated to formally announce the availability of the code today at the company's headquarters in Santa Clara, Calif. Officials last week said that parts of the Java Platform Standard Edition (JSE) and Java Platform Micro Edition (JME) will be available under the same GNU General Public License used for the open-source Linux operating system and the MySQL database.

Sun said it will still offer commercial licenses for Java.

Users had mixed reactions to the move. Some said they welcomed the chance for additional scrutiny of the source code. Others worried that the open-source shift could lead to the creation of incompatible versions of Java through the process known as code forking.

Alan Flint, systems, applications and programming manager at Richmond Wholesale, a food distributor based in Richmond, Calif., said Sun's decision may persuade his company to use the programming language for the first time.

"Open source is an area I am interested in pursuing . . . to have multiple options and not be locked into proprietary scenarios," he said. "Everybody in the world has to go to Microsoft because they are so pervasive, but sometimes you feel like you are painfully being forced to do something that is not in the best interest of the company."

Mayur Raichura, director of information services at The Long & Foster Companies Inc. in Fairfax, Va., said Sun's open-source move persuaded the real estate firm to evaluate Java technology. Long & Foster doesn't use Java because of its cost and complexity, he said.

"With Java available as open source, we will definitely relook at the Java option as a development platform," he said.

Boscov's Department Store LLC won't be affected much right now by the move because the Reading, Pa.-based company uses other Java-based open-source tools like Red Hat Inc.'s JBoss application server and BEA Systems Inc.'s JRockit Java virtual machine for development, said Joe Poole, manager of technical support. "The big impact will occur in the future, when Java specifications won't be written by Sun alone and the runtime environments should be more compatible" with non-Sun software, Poole said.

T.N. Subramaniam, director of technology at RouteOne LLC in Farmington Hills, Mich., said he was never among those Java users clamoring for Sun to open the source code. "I have concerns that this may fragment [Java]," he said. Subramaniam said that RouteOne — a joint venture of the finance arms of DaimlerChrysler AG, Ford Motor Co., General Motors Corp. and Toyota Motor Corp. — will likely remain a Java shop.

He noted that RouteOne is moving away from using Java in its service-oriented architecture in favor of native XML.

John Muhlner, Sun's Java ME product marketing manager, said the move to open source means developers can "influence the direction we're taking the platform."

The Java components that Sun is making available as open source this week are the Java Compiler and the Java HotSpot virtual machine, which makes up the Java Software Development Kit in JSE and the core implementation of JME found on most mobile handsets. Additional pieces of JSE and JME will be available under open-source licenses later this year and in the spring of 2007, Sun said.

Michael Goulde, an analyst at Forrester Research Inc., noted that even though the code will be available as open source, Sun — not an independent organization -- will control Java. "Not only will Sun still manage the open-source project . . . [but] it still has control of the Java Community Process," he said. "It is not a completely vendor-neutral effort." ◗

> **Everybody in the world has to go to Microsoft because they are so pervasive, but sometimes you feel like you are painfully being forced to do something that is not in the best interest of the company.**
>
> **ALAN FLINT,** SYSTEMS, APPLICATIONS AND PROGRAMMING MANAGER, RICHMOND WHOLESALE

Pa. Health System Moves to Simplify Network Sprawl

BY MATT HAMBLEN

The University of Pittsburgh Medical Center last week said it has signed a $300 million contract with Alcatel to help it develop an IP network that supports voice, data and video communications via wired and wireless connections.

According to UPMC officials, the converged network will replace existing data networks that are based on equipment from Cisco Systems Inc. as well as myriad voice systems running on switches from four vendors.

Work on the convergence project is scheduled to start early next year, and Alcatel said it expects to finish deploying the new network within four years. But neither Alcatel nor the UPMC would say how long the contract will run for, describing it only as a multiyear deal.

The UPMC operates 19 hospitals and about 400 doctors offices and other outpatient sites, and it has 43,000 workers — making it the largest employer in western Pennsylvania. But Bill Hanna, the health care system's vice president of IT infrastructure, said the UPMC's sprawling organization has left it with a patchwork of more than 150 voice switches and 30 voice-mail systems, plus 25 call centers.

UPMC signed a $300 million deal with Alcatel.

Consolidation Key

As part of the convergence project, UPMC officials hope to reduce the current setup to a single voice-mail system and one call center, Hanna said. He added that it isn't clear how many IP-based switches will have to be installed to support the new network. And although he predicted that the convergence work will result in lower networking costs, he couldn't say by how much.

Hanna said the core network will be based on technologies usually reserved for telecommunications companies, including carrier-class routers and Dense Wavelength Division Multiplexing technology operating over fiber-optic cabling. "It will be very high performance — not what you'd typically see in an organization's network, especially in health care," he said.

Nancy Landman, the UPMC's vice president of business development and IT operations, said Alcatel beat out rival vendors such as Nortel Networks Corp. and Avaya Inc. partly because the health care system felt that Alcatel would act more as a long-term partner than as a traditional vendor.

For example, the deal calls for the UPMC and Alcatel to each invest $25 million in a joint venture that will develop health care applications and technologies. They said they initially will focus on products that enable health care providers, emergency response workers and other parties to share information during public-safety crises, such as a pandemic or terrorist attack.

Hanna said Alcatel also embraced the idea of supporting a hybrid network of digital, analog and IP-based phones, something Cisco couldn't do.

Brian Riggs, an analyst at Current Analysis Inc. in Sterling, Va., said the UPMC project gives Paris-based Alcatel a big foothold in the U.S., where it has struggled to win customers for many years.

"The UPMC told me they didn't want to deal with multiple vendors," Riggs said. "But to have an organization that's ripping out Cisco and replacing it with Alcatel is a big deal. It's a lot of trust in Alcatel."

The UPMC has already installed several thousand wireless access points, and that amount is expected to grow to about 30,000 as part of the convergence project. ◗

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BRIEFS

Microsoft Probes ActiveX Defect

Microsoft Corp. is investigating reports of a vulnerability in a Windows ActiveX control that could allow an attacker to remotely control a computer. One security company rated the flaw critical, but Microsoft said it allowed only limited attacks. The vulnerability, which is not patched yet, affects Windows 2000 Service Pack 4, Windows XP Service Pack 2, Windows Server 2003 and Windows Server 2003 Service Pack 1.

Firefox 1.5 Support To End April 24

Mozilla Corp. said it will stop issuing security and stability fixes for the open-source Firefox 1.5 browser on April 24. The company recommended that users upgrade to Firefox 1.5.0.8 by that date. The new version includes software that will eventually allow Mozilla to push out Version 2 of the browser via Firefox's automatic update mechanism.

HP Charges InkTec With Patent Breach

Hewlett-Packard Co. has filed a complaint against the German subsidiary of InkTec Co. for violating HP's printer ink patents. The complaint, filed in a German court, alleges that InkTec-branded, do-it-yourself cartridge refill kits violate HP patents. HP said the alleged violations were found because of ongoing testing and enforcement efforts within the supplies unit of HP's imaging and printing group.

BEA Adds Bundled SOA Offering

BEA Systems Inc. has announced its first package of Enterprise Integration Portfolio tools, which are designed to help users during different stages of their SOA deployments. The offering includes the existing WebLogic Integration 9.2 and AquaLogic Service Bus 2.6 products and the new AquaLogic Integrator tool. BEA did not disclose pricing for the package.

[ON THE MARK]

HOT TECHNOLOGY TRENDS, NEW PRODUCT NEWS AND INDUSTRY BUZZ **BY MARK HALL**

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MATTHEW FAULKNER

Documents Tell Your Customers . . .

. . . what you think of them – which isn't much, it seems. Chris Stone, CEO of StreamServe Inc., laments that IT managers are missing an opportunity to help their companies improve customer relations every time invoices, lease documents and other papers are printed.

STONE: Make docs personal for customers.

"It's amazing how much business relationship mail is junk mail," Stone says. Take a peek at most bills from big corporations, and you'll see that the paperwork is designed for the business and not its customers, he contends. "We're just a number on an invoice," Stone says. But he claims that his company's Persuasion software lets you design readable customer documents and customize them for people other than your CFO. You can even add marketing materials such as info about new cars for customers whose auto leases are expiring. A version of Persuasion that supports Web services and has a revised user interface will ship next month, Stone says. It will also support applications built on top of SQL Server, DB2, SAP NetWeaver and IBM's FileNet technology.

Live video is becoming a vital . . .

. . . business service. So says Andy Howard, director of marketing at VBrick Systems Inc. He claims that companies are ratcheting up their use of video for applications such as monitoring offshore oil platforms or enabling CEOs to explain Page One scandals to their employees. To help, VBrick in the first quarter plans to ship a video encoder appliance with integrated management software from Media Publisher Inc. After it's been installed centrally and at remote locations, the appliance can digitize, compress and decompress video feeds for WAN transmissions. Media Publisher CEO Rod Bacon says massive video broadcasts of events to PCs will be possible. "We all see that having large-scale events is the golden chalice," he says. The goal is 100,000-plus seats. "That's pretty challenging," admits Howard — especially over a WAN.

The VBrick appliance can digitize video feeds for WAN transmissions.

The history of USB ports on your . . .

. . . network can now be revealed. Later this week, SecureWave SA will release a security utility called Device Scanner to partners who sell its endpoint security tools. Although a visit from a value-added reseller (VAR) may not be the most charming part of your day, being able to run Device Scanner on your network may just win you over. Dee Liebenstein, SecureWave's U.S.-based director of product marketing, says the software can document the history of everything that has been connected to your Windows PCs and servers via USB ports as well as FireWire and wireless links. You'll learn who has been attaching what and how often, which could help you find potential security policy problems. Best of all, the utility is free — except for the time you have to spend with the VAR.

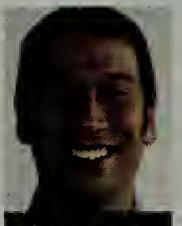
Get free reporting tools for . . .

. . . IBM's free database. No VAR drop-ins are necessary with IntelliView Designer and Report Analyzer, a pair of free reporting tools developed by Synaptris Inc. for IBM's free DB2 Express-C database. Better still, "there's no scripting, no coding," claims Synaptris CEO Madan Kumar. "Everything is drag and drop." According to Kumar, you can easily design graphical or data-driven reports with up to a million rows of data. Synaptris charges for training, a software development kit and a portal version of IntelliView. But if the tools are so easy to use, you may not need those extras. The software is in beta now and is scheduled for general release next month.

50k Average weekly downloads of DB2 Express-C, per IBM.

Logical and physical security meet . . .

. . . in the halls of government. As most federal agencies scramble to comply with a smart ID card directive issued by President Bush in 2004, vendors such as Tyco International Ltd. stand ready to help. Peter Boriskin, director of product management for access control at Tyco, says the company next month plans to ship Java-based personal identity verification (PIV) cards that meet the Federal Information Processing Standard (FIPS) 201. Agencies need to issue PIV cards containing digital certificates and biometric data to all employees and contractors by September 2008 in order to secure access to IT systems and government buildings. Tyco's cards will do that, working with the company's Secure 9000 event management system, Boriskin says. The combined offering is due on Dec. 22, ahead of a January deadline for fielding PIV systems that meet the FIPS 201 specs. ▶



Comply with FIPS 201 quickly, says **BORISKIN.**

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Microsoft

The Highly Reliable Times

VOLUME 1 – ISSUE 1

Windows Server 2003

LONDON STOCK EXCHANGE CHOOSES WINDOWS OVER LINUX FOR RELIABILITY

Tom Nagy for The Highly Reliable Times

THE HEADQUARTERS BUILDING of the London Stock Exchange, located in London's Paternoster Square.

Reliability Is Key in the "World's Capital Market"

By MICHAEL BETTENDORF

LONDON, Oct. 2006 — When an IT system must process 15 million real-time messages per day, with peaks at 2,000 messages per second, even one second of downtime counts. That's the pressure the London Stock Exchange faced when building Infolect, the Exchange's real-time stock-ticker information delivery system.

The solution had to have rock-solid reliability, nothing less. "Reliability is one of the key attributes of the Exchange in its technology systems. These systems have to work every day, 24/7, to make sure the markets are there," said CIO David Lester, who evaluated both Linux and Microsoft® Windows Server® 2003 for the Exchange's core technology systems. "We looked at a number of different platforms for our Technology Roadmap, and we lined up our business requirements with the capabilities of those platforms, and Windows Server was the clear choice."

In Lester's view, long-term reliability is a function of a solid relationship: "We wanted a deep partnership with an organization that could deliver the kind of mission-critical technology that we needed, and we felt Microsoft delivered just that."

For the full London Stock Exchange case study, plus other case studies and independent research findings on the reliability of Windows Server versus Linux, visit us at microsoft.com/getthefacts

LESTER SPEAKS OUT:

"We looked at a number of different platforms for our Technology Roadmap, and we lined up our business requirements with the capabilities of those platforms, and Windows Server was the clear choice."

–David Lester, CIO,
London Stock Exchange

BREAKING NEWS:
London Stock Exchange Achieves Record Reliability

David Lester, Chief Information Officer of the London Stock Exchange, cites Windows Server as key to maintaining system reliability and performance.

— Continued on Page B3.

BRIEFS

NTP Files Lawsuit Against Palm

NTP Inc. filed a patent infringement lawsuit against Palm Inc. The suit is similar to an earlier one that the patent-holding firm filed against Research In Motion Ltd. that nearly shut down RIM's BlackBerry service. The new lawsuit, filed in a Virginia federal court, alleges that Palm is using NTP technology in its mobile wireless e-mail devices. It seeks to stop Palm from selling and operating such products. In March, RIM agreed to pay $612.5 million to settle NTP's patent claims.

Office '07 Released To Manufacturers

Microsoft Corp. has released the system code for Office 2007 to manufacturing. Customers in Canada and the U.S. can start downloading Office 2007 on Dec. 1, one day after the company plans to officially launch the updated suite along with Windows Vista and the Exchange Server 2007 communications software at an event in New York.

Duffield Firm Unveils First ERP Suite

Workday Inc., PeopleSoft cofounder Dave Duffield's latest venture, has unveiled the first of four planned on-demand ERP suites. The new Workday Human Capital Management is already deployed at two companies: multichannel customer service firm Kana Software Inc. and Biosite Inc., a biotechnology company. Workday plans to bring out on-demand suites of financial, resource and revenue management software next year.

HP Closes $4.5B Mercury Acquisition

After extending its offer four times, Hewlett-Packard Co. has finally completed its $4.5 billion purchase of Mercury Interactive Corp. Mercury is now a wholly owned HP subsidiary. HP will unveil its plans for Mercury's application management technologies at its Software Universe customer event in Geneva next month.

Continued from page 1

E-voting

and Pennsylvania.

For example, some early voters in Florida's Broward and Miami-Dade counties reported difficulties getting the touch-screen systems to display the candidates they voted for. A spokeswoman for Florida Secretary of State Sue Cobb downplayed the reports of machine malfunctions, which she said were isolated and caused mostly by poll worker errors.

Holly Jacobson, codirector of Voter Action, a nonprofit election watchdog organization in Berkeley, Calif., contended that the early reports of few problems with e-voting machines were misleading.

"Although I heard reports that for the most part things went smoothly, that doesn't seem to be the experience of many voters — particularly in Maryland, Pennsylvania, Florida, Ohio, Colorado, San Diego County and elsewhere," she said.

"Reading through these reports really does give a tragic view of the voting experience for many," Jacobson added.

For instance, in Ohio, 43 of Cuyahoga County's 573 polling places had machine problems that affected voters last week, according to Alan Melamed, a spokesman for the county's board of elections. At eight of those sites, voters had to use paper ballots because of faulty hardware.

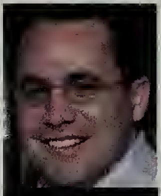
'No Big Deal'

Joseph Demma, chief of staff for Utah Lt. Gov. Gary Hebert, whose office oversees elections in that state, said voters in Utah County encountered some problems with Diebold Election Systems TSX touch-screen systems during last week's election.

He said that delays in preparing encoders, which program specific ballots, caused some machines to be unavailable at the start of voting. However, Demma said it was "no big deal," noting that people who couldn't vote on those machines used paper ballots until the machines were up and running.

Through late last week, there were no reports of significant meltdowns or hacks that could tip a major race, according to officials and e-voting critics who closely watched races in several states.

Until all results are reported and certified, and the performance of e-voting hardware is more completely assessed, it's difficult to judge how well the DRE touch-screen systems held up, said several observers. Election Data Services Inc., a consulting firm in Washington, projected that as many as 38% of registered voters across the country could use the touch-screen systems to vote in the election.



AVI RUBIN says he still opposes e-voting, although the machines' performance has improved.

"What we do know from [the election] is that the rollout of the new systems represented an enormous change for many officials and poll workers — in many cases, in a last-minute rush," said Justin Levitt, counsel for the democracy program at the Brennan Center for Justice at the New York University School of Law.

> Overall, [the e-voting process] was a huge success in Utah. We are extremely pleased.
>
> **JOSEPH DEMMA,** CHIEF OF STAFF FOR UTAH LT. GOV. GARY HEBERT

Levitt said that while the number of affected machines appears to be low nationwide, the number of problems is still higher than it should be. "Many precincts were simply unprepared to deal with servicing the number of voters arriving at the polls," he said. "The user experience suffered as a result."

Positive Perspective

Despite a few glitches, top election officials in several states, including Texas, Maryland, Florida, Utah and Alaska, said after the election that the electronic voting gear in their states worked well.

"Overall, [the e-voting process] was a huge success in Utah," said Demma. "We are extremely pleased."

In the days after the election, vendors of e-voting machines were upbeat about the performance of their products, and they maintained that voters are getting used to the technology.

"Our customers did a great job," said a spokeswoman for Sequoia Voting Systems Inc. The Oakland, Calif.-based maker of optical-scan and DRE machines claims a nationwide installed base of some 100,000 units. "As we predicted, things went smoother this November than they did in the primaries [earlier] this year because the officials, poll workers and voters have had more exposure to them," she said.

DRE critic and blogger Brad Friedman, founder of voter activist group Velvet Revolution,

Continued on page 14

Critics Split on Whether to Abandon DREs

E-VOTING CRITICS mostly agree that touch-screen voting systems have serious flaws, but many disagree on whether such machines should be abandoned.

For example, Michael Shamos, a professor who specializes in e-voting issues at Carnegie Mellon University, said that although DRE touch-screen systems have problems today, their ease of use and other qualities make them worth fixing.

Shamos called on vendors to "make more-reliable equipment" so the technology can safely be used in elections.

On the other hand, several critics urged that touch-screen machines no longer be used in polling places and called on election officials to use only optical scan systems.

Avi Rubin, an elections judge in Maryland's Baltimore County and a professor of computer science at Johns Hopkins University, suggested that elections officials use only optical scan technology.

Rubin indicated that although the performance of Diebold Election Systems' TS touch-screen systems in his precinct had improved considerably since the primary election in September, he still contends that the technology remains insecure. "Unfortunately, I believe there are an unimaginable number of problems that could crop up with these machines," he said in a blog on his Web site.

Rubin suggested that Maryland move completely to optical scan voting technology before the 2008 election.

Bruce Schneier, an author and chief technology officer at Counterpane Internet Security Inc., agreed that optical scan hardware is the safest e-voting technology.

"No voting system is perfect, but optical scan voting is the most accurate, reliable and secure system we have," he said. Schneier noted that such systems are used without problems in his home state of Minnesota.

Justin Levitt, counsel for the Democracy Program at the Brennan Center for Justice at the New York University School of Law, which follows voting technology issues, said it's too early to give up on DRE technology.

"Just as we shouldn't have rushed to put new [e-voting] systems in place, we should not be rushing to take them out of commission," he said. "It's way too early to be making blanket statements about the merits of e-voting as a whole."

– MARC L. SONGINI

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'Vote Flipping' Is Real, but Its Cause Is the Subject of Debate

Some blame machines; others say it's voter error

BY TODD R. WEISS

BEFORE AND during last week's midterm elections, reports emerged that "vote flipping" — where a voter selects a candidate using e-voting hardware and the machine counts the vote for another candidate — had occurred in some states.

For example, voters in both Broward and nearby Miami-Dade County in Florida had complained of vote flipping during early voting, though local elections officials assured the public that no votes were changed.

Such problems have been reported in U.S. elections since 2004, when states started a push to use electronic voting machines. The goal of e-voting was to improve the accuracy of elections. Instead, for many voters, the change has prompted suspicions that votes aren't being correctly counted.

Despite e-voting critics' fears that vote flipping is caused by flaws in the machines, others say that such problems can be caused by user error, machine calibration problems or other factors.

Stanford University computer science professor David L. Dill, who founded the nonprofit Verified Voting Foundation and VerifiedVoting.org, both based in San Francisco, last week called for investigations to determine the cause of vote-flipping incidents.

"People have been way too quick to diagnose the problem," Dill said. "It could be a calibration problem with touch screens, but I'm not sure that anyone really knows because no one's looked at it. I want facts . . . and all I've heard for two years is speculation."

Dill rejected one theory: that the problem is a conspiracy to defraud voters of their votes and give the election to the opposition. Once a voter picks a candidate, a review screen shows who they voted for. "It seems to me if you were trying to commit fraud, you wouldn't show [the ballot] to the voter," he said.

Dill said the problem could be caused by voter error, perhaps by accidentally touching a screen and erroneously making a selection. He suggested that a panel of experts be formed to investigate the issue and determine how to fix any problems and get fixes to voting officials.

> "The fundamental problem with any touch screen is that calibration matters, that angle of touch matters.
>
> **DAN WALLACH,** ASSOCIATE PROFESSOR OF COMPUTER SCIENCE, RICE UNIVERSITY

Contributing Factors

Ted Selker, co-director of the Voting Technology Project being conducted by the California Institute of Technology and MIT, has one explanation for such incidents: sloppy voters. Experiments by the researchers have found that voters incorrectly choose a candidate on their ballots one in 30 times, even under laboratory settings. "People are just sloppy and make mistakes," Selker said.

Though voters may believe such problems are caused by e-voting machines, Selker said the actual cause may be simply how voters use e-voting hardware. For example, he said voters often try to drag a finger across a selection on touch screens that are designed for tapping. "Vote flipping is a user-interface problem," not a technical flaw, he said.

Machine calibration can be a problem because the units are sensitive to inputs based on a user's height and other factors, he said. Better machine designs and simpler voter-selection processes would help fix any problems, said Selker, an associate professor of media arts and sciences at MIT who has done extensive research on product design and human interfaces.

Avi Rubin, a professor of computer science at Johns Hopkins University in Baltimore and director of ACCURATE, an election research center, said the only way to be safe from vote flipping is to have paper records of every ballot cast. "My big worry is that we cannot ever say conclusively whether or not it happens" as a result of software glitches, tainted code, machine rigging or other tampering if there is no paper record, he said.

Paper records also allow recounts in the case of a disputed result, Rubin noted, adding that "without them, recounts are impossible."

Dan Wallach, an associate professor of computer science at Rice University and an associate director of ACCURATE, said vote flipping has been a recurrent problem in recent elections but shouldn't be blamed on electronic voting machines. He blamed the problem mostly on calibration issues.

"The fundamental problem with any touch screen is that calibration matters, angle of touch matters," Wallach said. Different people even use different parts of their fingers to touch the screens, he said. The only way to fix the problem, he suggested, is to increase the size of candidate selection buttons and place them farther apart on the screen, so "if you miss one button, you're not likely to touch another one."

A spokeswoman for e-voting machine vendor Sequoia Voting Systems Inc. said vote flipping is caused by human or procedural error, not by e-voting machines. "Sometimes the machines need to be calibrated or recalibrated," she said. "Machines in and of themselves do not flip votes."

E-voting machines are far more secure, accurate and auditable than the mechanical lever-operated voting machines and other systems they replaced, the spokeswoman contended. She called vote-flipping concerns a "conspiracy theory from activists and bloggers."

A spokesman at e-voting equipment vendor Diebold Election Systems also said that e-voting machines don't cause vote flipping. "It's not a problem," he said. "It doesn't exist. This again falls into the 'what if' scenario." ◗

Continued from page 12

E-voting

said that e-voting machine breakdowns forced the use of paper ballots in many locations across the U.S.

For instance, in Denver, problems with homegrown e-poll books, which control access to machines, forced voters to use paper ballots for a period in the morning. The problem prompted the Colorado Democratic Party to unsuccessfully seek a two-hour extension to polling hours in Denver District Court

Meanwhile, Avi Rubin, an elections judge in Maryland's Baltimore County and a professor of computer science at Johns Hopkins University, said the performance of e-voting technology in his precinct had improved considerably since the September primary.

In last week's election, Rubin said, there was only one serious glitch in a single Diebold TS touch-screen voting machine in his precinct. In a blog on his Web site, Rubin noted that the e-poll books used with the Diebold machines by the precinct, which had caused considerable problems during the primary, "worked flawlessly" in the general election.

Nevertheless, he said he remains opposed to the use of DREs because he believes that they still lack adequate security measures. (See "Critics Split on Whether to Abandon DREs," page 12.)

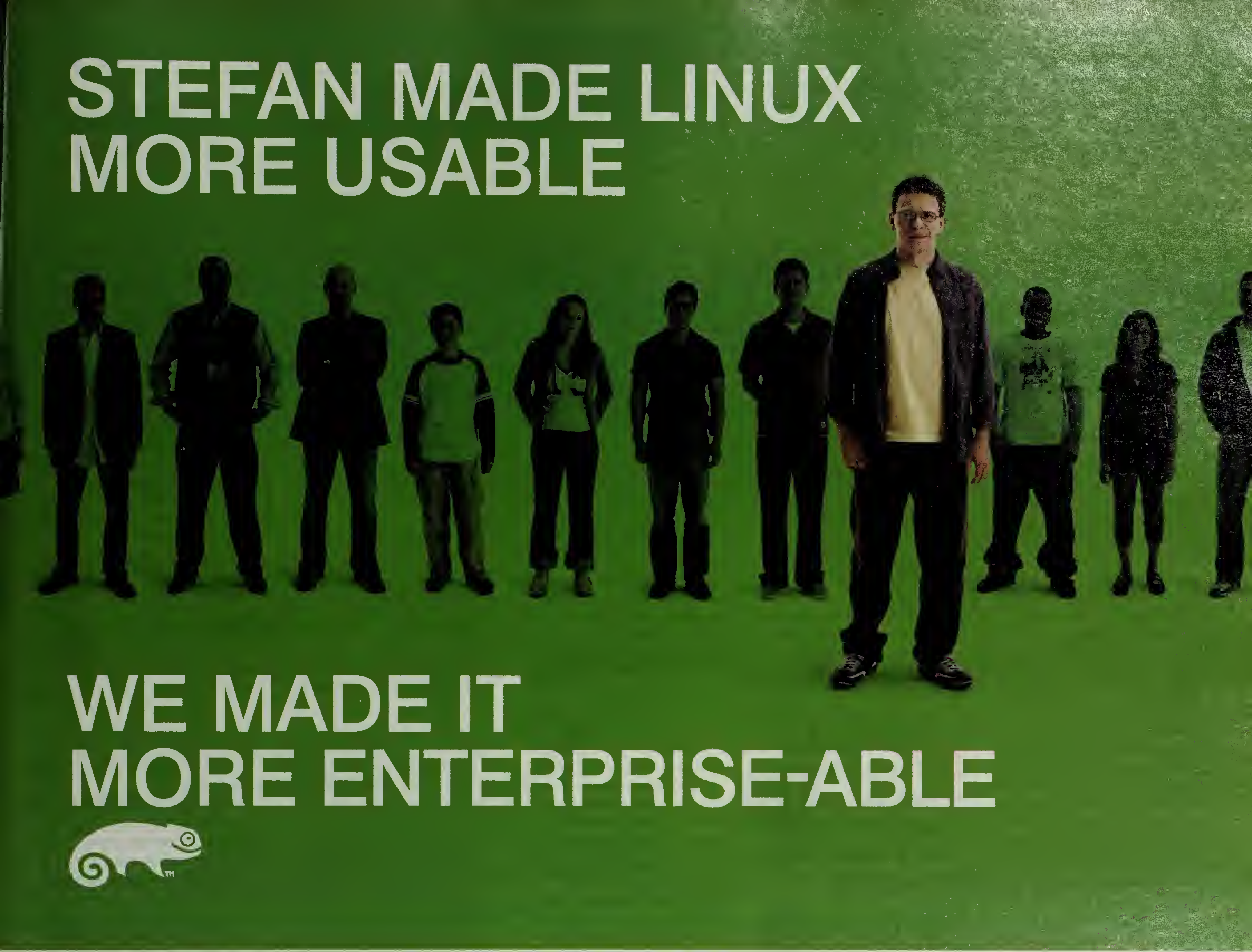
Despite the apparent lack of major problems last week, e-voting critics urged that the technology continue to be closely monitored.

This year's scrutiny by media outlets, which detailed potential problems, may have headed off hacking attempts that could have affected the results of a major race, said Bruce Funk, the former elections director for Emery County, Utah, and an outspoken critic of touch-screen systems.

Funk called for improved audits of election results and said that paper ballots should be issued to people who request them.

"It's [the] 2008 [election] that worries me the most," he said, adding that the apparent lack of problems in last week's election "only lessens the public concern over the real security problem that still exists." ◗

Computerworld's *Todd R. Weiss contributed to this story.*



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VMware Users Open To More Competition

Rivals pushing virtualization vendor to be more aggressive, IT execs say

BY PATRICK THIBODEAU
LOS ANGELES

VMWARE'S DOMINANCE of the server virtualization market faces increasing threats from Microsoft Corp. and open-source rivals. Proof of that was in evidence last week at VMware Inc.'s own user conference, where competitors had booths and Microsoft's virtualization software was tucked into the backpacks handed out to attendees.

Although some users were surprised by VMware's display of openness to its rivals at VMworld 2006, the competition is needed, according to attendees such as David Freed, a senior systems analyst for the Los Angeles city government's finance department.

As a result of the competitive pressure, VMware is "getting much quicker at releasing upgrades," said Freed, who also thinks rival offerings are forcing VMware to be more aggressive about dropping prices and adding features. "Competition is doing a good thing for [users]," he said.

VMworld drew about 7,000 attendees, and users and analysts at the conference agreed that VMware is well ahead of its competitors in offering x86 virtualization software with sophisticated functionality. But that doesn't mean corporate IT managers are ignoring alternatives to the EMC Corp. subsidiary's products.

Robert Hopps, an IT manager at Safeco Corp., spoke at VMworld about the Seattle-based insurer's deployment of VMware technology for disaster recovery purposes within its IT operation, which includes about 1,600 servers.

> **"Microsoft is going to want to compete, and so is XenSource. Right now, it doesn't look like they can.**
>
> **DENNIS ROBINSON,** TECHNICAL INFRASTRUCTURE MANAGER, GENEX

"We like VMware. It's definitely meeting our needs right now," Hopps said after his talk. But Hopps added that he will remain "tool-agnostic" and continue to evaluate rival products against VMware's.

Nicholas Biggestaff, a Unix systems administrator at the University of Missouri's main campus in Columbia, said he also likes VMware's software. But he's willing to consider XenSource Inc.'s open-source technology, which he said has annual support costs that are only about one-third as much as what VMware charges. "It's cheap enough that it's worth looking at," Biggestaff said.

Genex Services Inc., a medical management firm in Wayne, Pa., is piloting VMware's tools in advance of a server consolidation project scheduled for next year.

"Microsoft is going to want to compete, and so is XenSource," said Dennis Robinson, a technical infrastructure manager at Genex. "Right now, it doesn't look like they can."

Nonetheless, Robinson said he plans to "do a little bit of a bake-off" between VMware and Microsoft before a final purchase decision is made.

Gartner Inc. analyst Carl Claunch said that VMware's future revenue growth will come from virtualization management and configuration tools — not from the runtime hypervisor that provides the underlying virtualization.

VMware's approach, Claunch said, is to "build this momentum around virtualization — even if some of it's from Xen and [Microsoft's] Virtual Server — and get control of configuration and management, the part where the money is in the enterprise."

Jay Haskins, a systems engineer at Holland America Line Inc. in Seattle, said the cruise line has a very good reason to consider virtualization: The amount of space for servers on board a ship is limited.

Holland America is testing VMware's software, Haskins said. But he also stopped by XenSource's booth last week. Asked about VMware's decision to allow its competitors to display their wares, Haskins grinned and said it was a good thing "because you can at least have other options." ▸

Virtualization Turns Up Political Heat for IT and Business Users

LOS ANGELES

POLITICS was one of the hot topics at VMworld 2006, but the political talk had nothing to do with last week's elections. Instead, it revolved around the internal issues faced by users of virtualization software, which can unsettle the balance of power within companies and their IT departments.

Virtualization can cause business users to lose ownership of servers that are consolidated into shared systems, making it difficult for IT managers to sell the technology internally. There also may be resistance among IT staffers if the idea is championed by the business side or a deployment affects storage and networking teams in addition to server managers.

Political concerns such as those prompted Larry Speights to attend a VMworld session devoted to some of the organizational challenges posed by virtualization.

Control of server resources is a touchy issue for business units that have had their own systems, said Speights, a technical adviser on a VMware project at a petroleum company that he asked not be identified. "The various owners of these systems say, 'It's my system, and when it's virtualized, it's not my system anymore. It's running shared with everyone else,' " he said.

IT staffers may feel threatened if the push for virtualization comes from the business side and "is not going through their approval process," said Brad Wagner, a technical lead for platform services at Georgia Pacific Corp. in Atlanta. "It's typically a bad thing when the executives agree to a technology and the technical people didn't invent it there."

Wagner and Gary Tierney, senior manager of technical services at Fair Isaac Corp. in Minneapolis, have each been running systems equipped with VMware's software for about three years.

Tierney said he prepared an elaborate presentation about the technology for employees at Fair Isaac. But he learned for himself that IT workers from different functional areas needed to be more tightly integrated because of virtualization's far-reaching effects.

What often sells business managers on virtualization is the promise of reduced IT costs through hardware and systems management savings. Tierney, though, recommended that IT managers shouldn't make any distinctions between their physical and virtual servers with end users.

"In the beginning, we were having some issues with people accepting virtualization and what it meant for them," Tierney said. Now, he said, IT staffers find it easier to just provide a server when users need one, without specifying whether it's an actual or virtual system.

– PATRICK THIBODEAU

EMC Broadens Its File Virtualization Capabilities

BY SHARON FISHER

EMC Corp. today plans to unveil a new version of its Rainfinity file virtualization appliance with updated software that offers better integration with the company's Centera fixed-data storage array.

Version 7.0 of Rainfinity also features a new file management application, said Jack Norris, the company's director of virtualization marketing.

Bill Fleming, senior systems administrator at Johns Hopkins University's Applied Physics Laboratory in Baltimore, beta-tested the appliance and said the new file-management capabilities make it more robust. The lab is using it in a project to migrate data from four-year-old Dell storage devices to EMC Clariion arrays, he said.

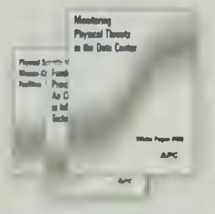
Fleming said the policy management feature in Rainfinity 7.0 is being used to automate the process of archiving the lab's 300TB of data based on how recently information has been accessed by users.

An IT manager at a San Francisco-based retailer, who asked that he and his company not be named, used the previous version of Rainfinity to migrate 8TB of data from two Network Appliance Inc. filers to an EMC Celerra IP storage array and called it "a lifesaver."

The manager said he's interested in Version 7.0 for its new policy features, which would allow the company to identify older data and port it to less-expensive storage. He said he's also interested in the new version's support for the Centera arrays installed at his firm.

Integrating Rainfinity with Centera makes "a ton of sense" because it creates a defined storage tier between primary and archived storage, said Tony Asaro, an analyst at Enterprise Strategy Group Inc. Having tools that can move the data is also critical, he said.

The appliance is scheduled to ship today. Pricing starts at $93,000; existing users can upgrade for $12,000. ▸



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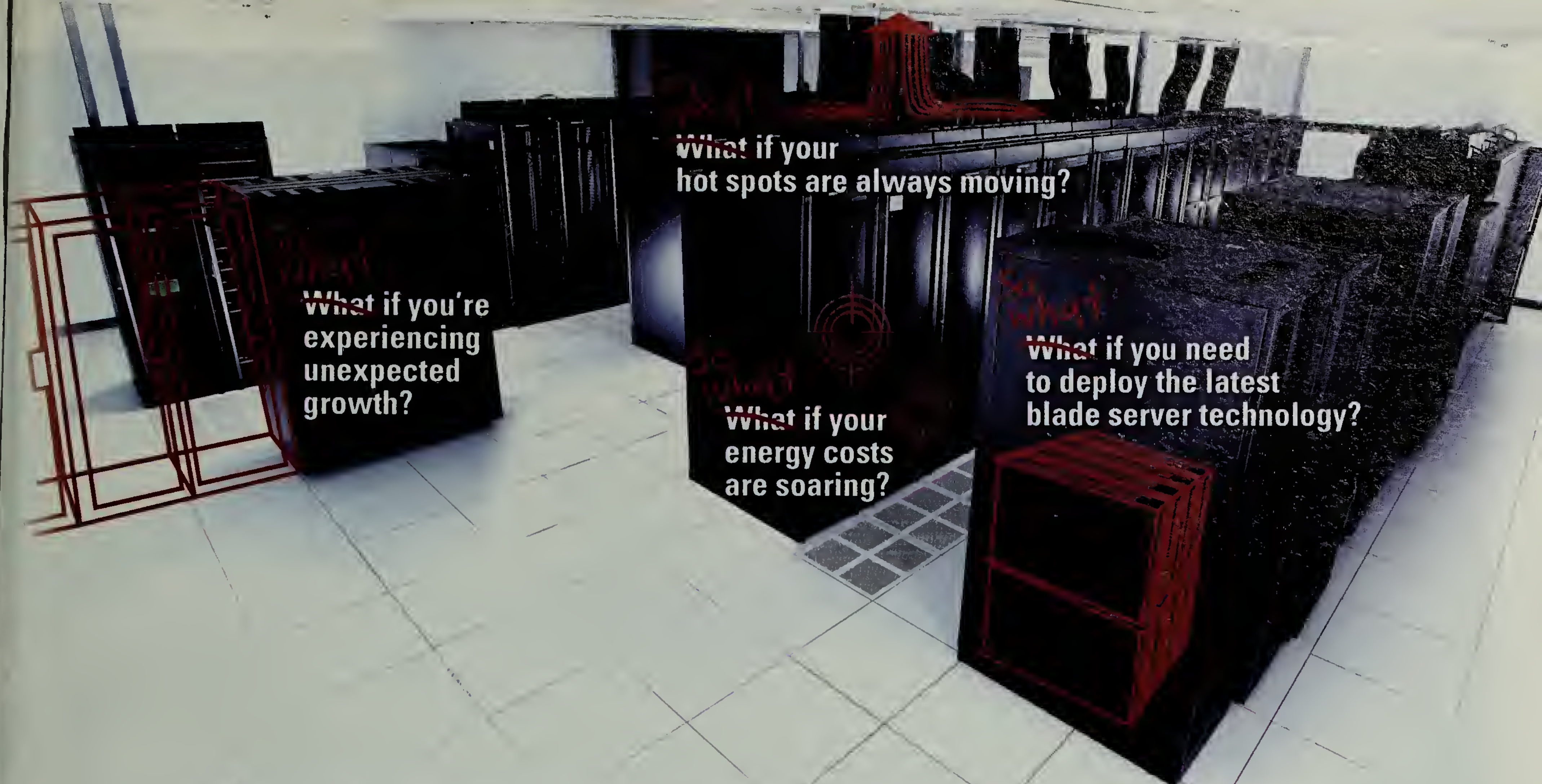
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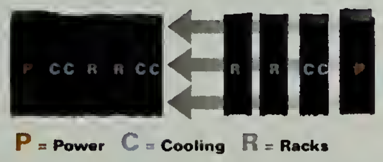

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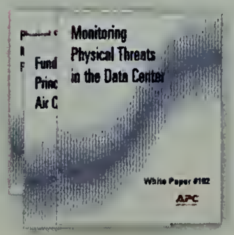

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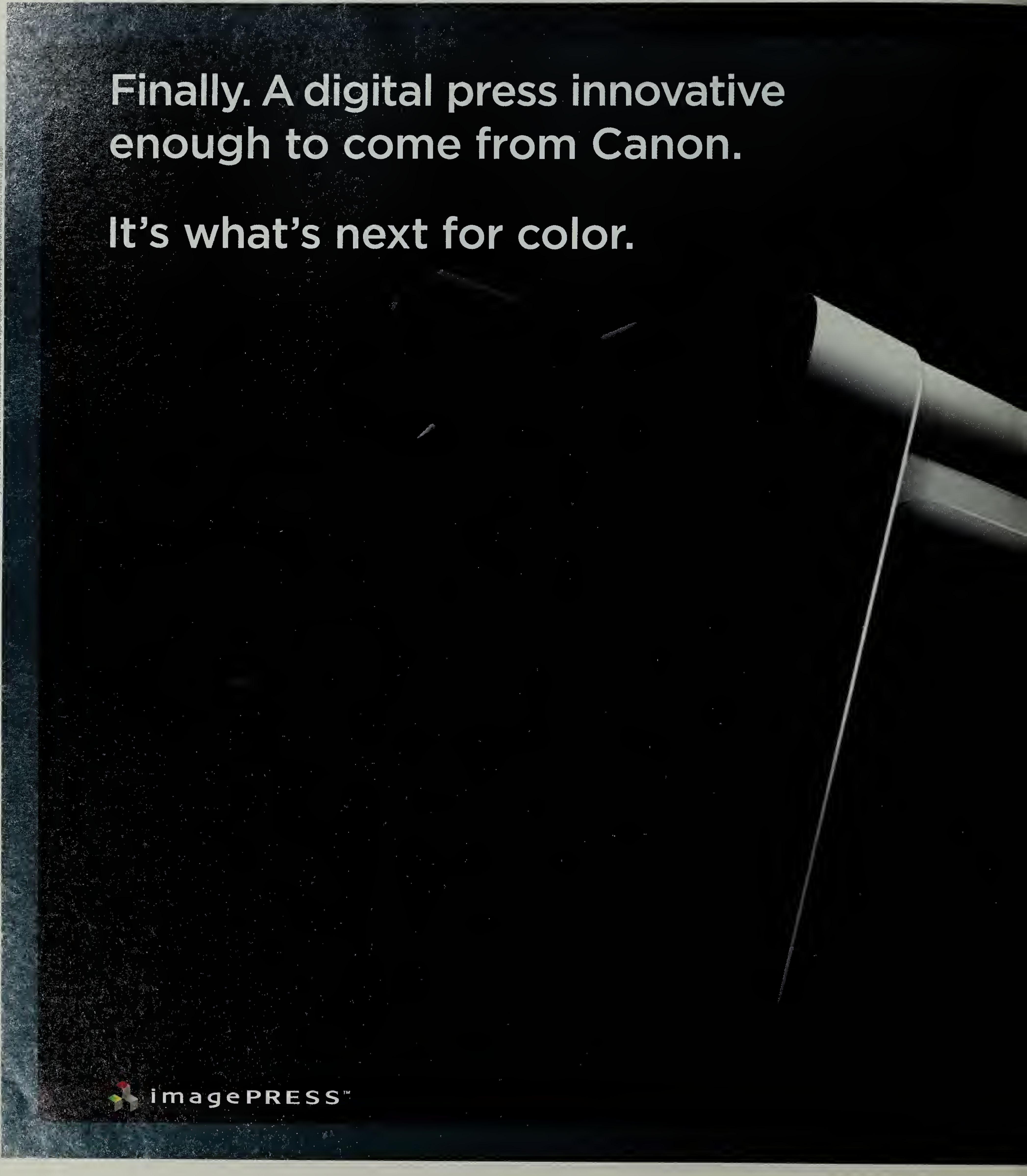
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Dual-Mode Capability Unites Wi-Fi, Cell Networks

BY MATT HAMBLEN

As wireless LANs continue to spread through corporate sites, several vendors are moving to offer dual-mode products that can support both Wi-Fi and extended cellular networks.

"We'd be quite interested in that capability — to have a Wi-Fi [handset] work as a cell phone," said John Tuman, director of network services at WakeMed Health & Hospitals in Raleigh, N.C.

The medical center already has about 650 SpectraLink voice handsets used by nurses over a Wi-Fi network from Aruba Wireless Networks Inc., along with about 500 separate cell phones. It would be valuable to have one phone that could work over both networks, mainly for the convenience of users, Tuman said.

WakeMed plans to buy Aruba software that's expected to be available early next year that can support dual-mode phones running between Wi-Fi and cellular networks. The updated software will run on a new Aruba 6000 Mobility Controller switch that will be installed later this month at the health care company, Tuman said.

Aruba last week unveiled a product road map that includes plans for adding support for multiple networks to its Mobile Voice Continuity software. The software is slated to be available in the first quarter of 2007, said Aruba founder Keerti Melkote.

Seeing Results

WakeMed has 600 access points spread throughout 2 million square feet of space in its facilities, along with nine Aruba Mobility Controller switches.

The medical center also wants to set up radio frequency identification technology throughout the medical center that will be supported by its existing Wi-Fi network, Tuman said.

Already, the voice-over-wireless capability helps nurses better maintain contact with their patients, according to Tuman. "It's working well," he said. "It gives nurses faster response to calls. Nurses like the flexibility of not being tethered."

Meanwhile, Symbol Technologies Inc. released a new wireless switch that can support dual-mode phone handovers with the addition of a software module, a spokesman said. The new RFS7000 RF switch is set to ship in 2007.

Siemens Communications Inc. plans to add similar capabilities to its HiPath product line in late 2007 or early 2008, a company spokesman said.

Paul DeBeasi, an analyst at Burton Group, said such dual-mode capabilities can let users make cellular calls that are switched through a Wi-Fi network and then onto a wireline switch. Because of that, vendors call the dual-mode handover capability fixed-mobile convergence, he said. ▸

APC Buy Puts More Power in Schneider's Hands

BY PATRICK THIBODEAU

The planned acquisition of American Power Conversion Corp. by Schneider Electric SA would combine two vendors that now sell competing backup power devices for data centers, although Schneider has only a small share of that market in the U.S.

It's too soon to say whether customers of either company can expect product line consolidations as a result of the $6.1 billion deal, according to APC spokesman Aaron Davis.

Nonetheless, Davis said APC officials have been reaching out to users since the deal's announcement two weeks ago, telling them that the West Kingston, R.I.-based company will still be able to meet their needs. "One of our priorities is to make our transition to new ownership smooth and seamless for them," Davis said.

But Seth Mitchell, infrastructure team leader at Slumberland Inc. in Little Canada, Minn., said he thinks the combination of Schneider and APC will be a difficult fit.

Mitchell uses APC's uninterruptible power supply products and said he has experience with the offerings of Schneider's MGE UPS Systems unit as well.

"I don't see a lot of positives in the short term," said Mitchell, whose company operates more than 100 furniture stores in 10 states. "It might look nice on a balance sheet. But getting two fierce competitors to integrate their highly contrasted ideologies to produce a cohesive set of products and services seems like a big task."

Potential Advantages

On the other hand, Vishal Sapru, an analyst at Frost & Sullivan Ltd. who focuses on the backup power market, said the acquisition should benefit APC's customers by giving them improved access to Schneider's line of UPS products.

The deal will give Schneider the top spot in the worldwide market for backup power devices, according to Sapru. He said that APC controls 28% of the market in North America, twice as much as its closest competitor, Eaton Corp.

France-based Schneider's MGE unit is stronger in Europe than it is in North America, where its market share is only between 2% and 3%, Sapru added.

Schneider said it expects to complete the all-cash acquisition in next year's first quarter. APC, which also sells cooling systems and other data center products, earned $45.1 million on revenue of $621.3 million in this year's third quarter.

But Schneider said that APC's profit margins have been hurt by the "significant investments" it has been making in large UPS systems. ▸

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GLOBAL DISPATCHES An International IT News Digest

IT Exec to Quit Network After Shift in Budgeting

PYRMONT, AUSTRALIA

SEVEN NETWORK LTD., a television network operator and magazine publisher based here, is losing its top technology executive in the midst of a move to transfer IT budgeting responsibility to its chief financial officer.

A spokesman for Seven Network confirmed last week that CFO Peter Lewis has taken over direct responsibility for the company's IT budget.

Meanwhile, Steven Longo, general manager of group IT services at Seven Network, confirmed that he will leave his job next month. Longo declined to discuss the ongoing changes to the company's IT organization.

His planned exit follows the resignation earlier this year of Peter Whitford, who left his job as information systems manager after more than 20 years at Seven Network.

The company spokesman said IT operations will be managed by the head of its broadcast engineering unit. The spokesman downplayed the shift in budget responsibility, saying there are no IT restructuring or cost-cutting plans. "The word *restructure* is too grand a term," he said. "IT has always been part of broadcast engineering."

In a survey of 275 CIOs conducted this year by the Australian edition of *CIO*, a *Computerworld* sister publication, only about one-third of the respondents said that they reported directly to the CEO at their companies instead of to the CFO.

■ SANDRA ROSSI, COMPUTERWORLD AUSTRALIA

GLOBAL FACT

279,513

The total number of thin-client systems sold in the Asia-Pacific region (excluding Japan) last year, a 64% increase over the 2004 sales level.

SOURCE: IDC, FRAMINGHAM, MASS.

India OKs Yahoo's Internet Phone Plans

BENGALURU, INDIA

YAHOO INC. last week said it has been given permission by India's national government to offer Internet telephony services to customers in the country.

AOL LLC also plans to introduce a set of Web-based services, including Internet telephony and instant messaging, in the Indian market, according to a spokesman for AOL India. The spokesman said that will happen soon, but he wouldn't disclose a date for launching the services.

Yahoo is creating a new company called Yahoo Internet Communications India to offer its telephony services, a spokeswoman said. The telephony operation will be separate from the company's existing Yahoo India subsidiary in Bengaluru, which formerly was known as Bangalore.

Internet telephony has become a potentially large source of revenue because of the rapid growth of Web use in India, the Yahoo spokeswoman said.

■ JOHN RIBEIRO, IDG NEWS SERVICE

Veterans Agency Plans To Redesign Web Site

SYDNEY, AUSTRALIA

THE AUSTRALIAN Department of Veterans' Affairs is seeking bids from vendors for a contract to redesign the agency's Web site in order to make information easier to find.

Bids are due by the end of this month, and work on the project is scheduled to begin in January or February and be completed by April 30.

Margaret Millard, the project coordinator at the DVA, said the company that wins the contract will be responsible for designing a service-oriented architecture based on input it gathers from user focus groups.

"We want to redesign the architecture of the site because people cannot find stuff," Millard said. "What we are doing now is long overdue. The Web site has been in need of redevelopment for several years, and we have finally got approval to do it."

According to the DVA's bid documents, the current Web site supports only a limited number of online transactions. The agency said in the bid papers that it is aiming to "significantly expand [the site's] e-business capability in the short-to-medium term."

Development of the Web site's content and graphics will continue to be done internally and isn't covered by the proposed contract, the DVA said.

■ MICHAEL CRAWFORD, COMPUTERWORLD AUSTRALIA

Samsung Unit Among Raided Chip Makers

SCHWALBACH, GERMANY

SAMSUNG SEMICONDUCTOR Europe GmbH confirmed this month that it was one of several chip makers in Germany raided by the European Commission as part of an investigation of alleged price fixing.

The EC disclosed on Oct. 31 that it had conducted unannounced inspections at the offices of several static RAM manufacturers in Germany. However, it didn't identify the companies that were raided.

Such surprise inspections are part of the preliminary stages of price-fixing investigations, the EC said.

Samsung's offices in Schwalbach, near Frankfurt am Main, were raided by EC officials on Oct. 11, according to a spokesman for the company.

"For the time being, we are fully cooperating with the investigation," the spokesman said. He added that Samsung hasn't been asked to turn over any specific documents to the investigators.

■ NANCY GOHRING, IDG NEWS SERVICE

Motorola Protest Leads Court to Delay Contract

DELHI, INDIA

THE DELHI High Court has delayed the awarding of a mobile network equipment contract by telecommunications service provider Bharat Sanchar Nigam Ltd. in response to Motorola Inc.'s complaint that it was unfairly excluded from the bidding.

In its Nov. 2 decision, the court ordered BSNL not to award the contract before this Thursday, when the next hearing in the case is scheduled. Neither Motorola nor BSNL, which is owned by the Indian government, would comment about the ruling.

Motorola filed a lawsuit against New Delhi-based BSNL last month, after its bid for the contract for GSM and 3G cellular network equipment was disqualified on technical grounds. As part of the lawsuit, Motorola said it was seeking further clarification about the bidding process from BSNL.

LM Ericsson Telephone Co. and Nokia Corp. were the low bidders for the contract. China-based telecommunications equipment maker ZTE Corp. also submitted a bid, but it too was disqualified for technical reasons.

■ JOHN RIBEIRO, IDG NEWS SERVICE

Compiled by Mike Bucken.

Briefly Noted

Nokia Corp. said it was awarded a seven-year contract worth $297 million Australian dollars ($230 million U.S.) to continue providing engineering, operations and field maintenance services for Vodafone Group PLC's mobile networks in Australia. The deal extends a contract signed in 2004 under which Nokia manages Vodafone Australia's GSM, 3G and HSDPA networks.

■ DARREN PAULI, COMPUTERWORLD AUSTRALIA

Intel Corp. and Micron Technology Inc. last week announced plans to build a factory in Singapore to produce NAND flash memory devices. Construction on the plant will begin during the first half of next year and will cost "billions of dollars," the companies said. Intel and Boise, Idaho-based Micron plan to create a joint venture to run the new factory.

■ SUMNER LEMON, IDG NEWS SERVICE

Hewlett-Packard Co. and SAP AG last week announced that their research organizations will work together on IT issues, focusing initially on hardware and software virtualization. The joint effort will include collaboration by workers at HP Labs in the U.K. and the U.S. and at SAP Research in Australia, Germany and Northern Ireland. The companies didn't provide any financial details or say how many staffers will take part.

■ CHINA MARTENS, IDG NEWS SERVICE

NTT DoCoMo Inc. said the number of subscribers to its 3G cellular telephone service in Japan hit 30 million on Nov. 4, just over five years after the service was launched. Tokyo-based NTT DoCoMo added that it has had more 3G subscribers than 2G subscribers since midyear.

■ MARTYN WILLIAMS, IDG NEWS SERVICE

Nortel Networks Ltd. last week said it has opened a 180,000-square-foot facility in Beijing that will support the development of next-generation products for customers worldwide. The new facility, Nortel's third development center in China, also houses the headquarters of the Brampton, Ontario-based vendor's Chinese operations.

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Microsoft Takes Criticism of Sun Deal to Heart, Exec Says

Crafts Novell pact to avoid similar reaction; says Red Hat users not at risk

BY JEREMY KIRK

Two weeks ago, Microsoft Corp. and Novell Inc. agreed to undertake a joint effort to enable Novell's SUSE Linux and Microsoft's Windows operating system to better work together. They also agreed to indemnify SUSE Linux users from lawsuits for violations of Microsoft patents. The move prompted questions about Microsoft's long-term open-source plans and how this deal compares to an earlier deal with Sun Microsystems Inc., which has been criticized for lacking substance. In an interview with the IDG News Service last week, **Bill Hilf,** *general manager for platform strategy at Microsoft, spoke about both deals and about how the company regards open-source software.*

How does Microsoft view open source? Microsoft does not compete with open source. We compete with open-source products that people sell. When we did the deal with JBoss [an open-source middleware company now owned by Red Hat], we found a few interesting stats. Half of their users were running on Windows. We also found that after we did the deal, we sold more Windows server licenses. That's just fundamental good business. So when we get into the competitive debate, JBoss helped our Windows server business grow.

What is Microsoft's motivation for the deal with Novell? This is an intellectual property deal. There will be an overlap at some point between our intellectual property and open source that we have to resolve. We said let's put in place something that allows us to A) establish a process for how we can work with an open-source company on our intellectual property; B) do it in such as way that it can still work within the GPL [GNU General Public License]; and C) do this in a way where we can clearly draw the line between the community developer, the noncommercial open-source community guy writing code and the commercial developer who is using open-source code.

Doing one of those is easy; doing two of them is actually hard but possible. Doing all three is very, very hard because one can contradict the other.

Why did Microsoft agree not to sue SUSE users and noncommercial open-source developers for patent infringement? We have the largest software patent portfolio in the world. With open source, we needed to have something in place where we knew that if our intellectual property was infringed upon, we had a framework in place to resolve that in an effective way.

Isn't this a veiled threat to Red Hat users – that commercial developers are only legally protected by using SUSE Linux? There's no threat. There's a fundamental premise that we need to have the market understand we have a substantial amount of intellectual property in the operating system space.

Is Microsoft going to approach other open-source vendors? Our door is open to anyone to do a similar deal.

Is there any significance to the timing of the Novell deal? We started on the general framework for this three years ago. The deal with Novell started about six months ago. There was just a lot of work we needed to do to understand the GPL side of it and not violate the GPL. We are saying we are providing coverage for Novell's customers from a Microsoft intellectual property perspective. That allows us to work with the GPL because the GPL is very specific about licensing of patents.

People look back on Microsoft's 2004 technology development deal with Sun and wonder what it accomplished. Will we look back at the Novell deal in two years and wonder what really came out of it? We've gotten a lot of reaction about that. There's actually a tremendous amount of work that we do with Sun at an engineering level, but it just doesn't get exposed. We made sure to put some important things in place that would be visible into this work, like a joint lab. Also, we are putting a substantial amount of co-marketing into this. We've learned from the Sun market reaction. ▸

Eclipse Picks up Speed at Five-Year Mark

Open-source IDE gaining ground in corporate IT

BY HEATHER HAVENSTEIN

Five years ago this month, the Eclipse consortium was unveiled by IBM and others with an eye toward offering tools based on the open-source Eclipse integrated development environment (IDE).

Since then, use of Eclipse has spread among corporate developers working with both the publicly available Eclipse source code and packaged tools based on the technology from vendors such as IBM, BEA Systems Inc. and Borland Software Corp.

Market research firm IDC estimates that more than 20% of software developers worldwide work in organizations that make significant use of Eclipse. The IDE has been managed by the not-for-profit Eclipse Foundation in Ottawa since early 2004.

"Compared to other commercial products, Eclipse is much better in quality and features," said Barry Strasnick, CIO at benefits provider CitiStreet LLC. "There is very little reason to spend money on commercial IDEs anymore. We have not enforced [Eclipse's] use for all developers, but it has become the de facto standard."

A Boost for Productivity

Based on surveys of CitiStreet developers, Strasnick said that Eclipse makes software development more efficient because it reports errors as soon as code is typed and because Eclipse can better organize Java code without requiring that it be manually changed.

"The quality of the Java code produced using Eclipse is much better than code produced using other tools," Strasnick said.

John Cunningham, president of Band XI International LLC in West Hartford, Conn., said his company used Eclipse to build a commercial wireless application that runs on handheld devices and monitors sensors for nerve agents, cyanide, radiation and other threats.

Worldwide Eclipse Usage

	Percentage of Respondents
Significant production use	22.6%
Minor production use	11.5%
Trial use	7.9%
Under evaluation	8.3%
No activity yet	37.4%
Don't know	12.3%

BASE: 5,000 SOFTWARE DEVELOPERS WORLDWIDE
SOURCE: IDC'S Q4 2005 SWDC SURVEY

The application, called Cyrano, was used by the Michigan National Guard to patrol for possible biological, chemical or nuclear attacks at the 2006 Super Bowl in Detroit and at NASCAR races in the state in June and August.

Philip Rusiecki, survey team leader in the Michigan National Guard's 51st Weapons of Mass Destruction Civil Support Team, said that prior to automating the monitoring effort with Cyrano, soldiers at such events had to use radios to report sensor readings to a command center.

The unit first used the Cyrano application at the Super Bowl in February, he said.

In the past, Rusiecki said, the soldiers -- who would likely be among the first to respond to a terrorist attack — would spend 20% to 30% of their time reporting results. "Cyrano allows us to log all the readings that come back from the hot zone," he said. "It allows the soldiers to concentrate on their mission and not on reporting back readings from radiation meters."

David Johnson, director of software engineering at E Entertainment Television Inc. in Los Angeles, said that most developers at his company choose to use the Eclipse IDE.

"Eclipse early on integrated well with our source management system," he said, "where other tools were lagging behind in support." ▸

Hurd Enough

THE STORY "Hurd: 'I Wish I Had Asked More Questions'" [*Computerworld.com*, Sept. 28] makes you wonder just why Mark Hurd still has his job. As CEO of HP, it was his job to oversee the work of others. The daily operations of HP were handled by several managers at the top level. All Hurd had to do was make sure they were doing their jobs correctly. What kind of CEO doesn't read all communications sent to him personally? If that's what CEOs do in the corporate world, then we have some very sick corporations.

Dennis S. Reiley
Flint, Mich.,
reiley@usol.com

Speech Technology Is Not for Everyone

BEFORE YOU start congratulating yourselves about the coming age of voice-based applications ["Now We're Talking," Technology, Oct. 2], you need to remember that there will always be people whose voices are impeded because of a lisp, a stutter, a stroke or alcohol.

While the moralists can dismiss the alcoholic, there are others such as me who are afflicted with a stutter, and we will prefer a keyboard.

Thomas B. Knoedler
Programmer/analyst,
Springfield, Ill.

Words Readers Love to Hate

WHEN IT comes to "Words We Love to Hate" [Management, Oct. 9], don't forget "leveraging" (using what you already own) and "human capital" (employees).

That last one just gives you a warm, fuzzy feeling and lets you know they care.

Liam Newnan
Systems administrator,
Charlotte, N.C.

HERE ARE a few more: agile development (anyone over 50 can hit the bricks); alignment (my way; antonym: the highway); onboarding (oops, outsourcing was a disaster); sysprog and sysadmin (major and minor deities); team player (anyone who gets alignment).

Dan Sitler
Lead software programmer,
Hobart Corp.,
Troy, Ohio

No Fuel Fool

REGARDING YOUR Sept. 18 article "Data Centers Eye 'Green' Power" [News], just who are we kidding here? The fact is that hydrogen production requires energy to generate it, especially if the hydrogen/oxygen source is from electrolysis of water, which requires copious quantities of electricity, most likely from fossil-fueled power plants. Thus, there is nothing "green" about fuel cells, other than the fact that there are no air emissions in the vicinity of use, compared with generators.

Fuel cells are worthy of consideration in the role of a UPS, such as the flywheel technology that you mention near the end of the article. I read no mention of fuel cells only for UPS use, which is the only application that makes any sense at all for this technology in a data center.

Tony Favero
Systems administrator,
Half Moon Bay, Calif.,
favero_t@hotmail.com

More Letters, page 27

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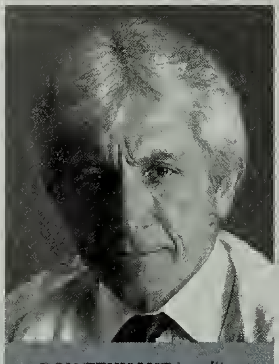
DON TENNANT

Argument of Convenience

THE ANCHOR STORY of our 20th Annual Salary Survey package has an intriguing headline: "The Lucky Ones" (page 41). The accompanying slot-machine artwork illustrates the story's contention that "a few lucky [IT workers] with the hottest skills" have won the salary-increase jackpot.



DON TENNANT is editor in chief of *Computerworld*. Contact him at **don_tennant@computerworld.com.**

I'm not so sure. I doubt that luck has much at all to do with how IT pros with hot skills are faring. The fact that the increases in salaries for network architects, Web developers and e-commerce directors outpaced the increases for other IT job categories isn't a matter of chance, and neither is finding oneself in one of those enviable positions.

Individuals in positions that garnered above-average salary increases this year recognize that you can't just sit on your existing skills and hope to get lucky. They'll tell you that you need to proactively research where the greatest demand lies and adjust your career path accordingly. That may or may not be worth the effort to you. If it's not, that's fine.

But don't fool yourself into thinking that the people in those positions simply had the good fortune of being in the right place at the right time. Almost one-third of directors of e-commerce, the biggest winners in our survey, reported that they had different job titles a year ago. Overused as it may be, there's something to be said for the old Wayne Gretzky line about skating to where the puck is going to be, not to where it has been.

All of that said, the fact remains that chance is indeed a key factor in determining how much money you're likely to make as an IT professional. If you happen to have been born female, odds are you're making 12% less than you'd be making if you had been born male, according to this year's survey.

That finding is even more troubling than our discovery from last year's survey that women were making 10% less than their male counterparts. I subsequently wrote about the injustice of that, and I got an earful from indignant males who insisted that the figures don't tell the whole story. They argued that since the numbers aren't weighted to account for factors such as family considerations that compel women to steer away from what would be career-enhancing relocations, dollar-for-dollar comparisons like this are misleading.

I agree that the gender wage-gap issue isn't black and white. But dismissing the disparity altogether as a reflection of the choices women willingly make to balance their home and work lives is an argument of convenience. Regardless of how it's rationalized, a 12% gap is wholly inconsistent with the standards of fairness and equity that we should expect in the workplace. And the fact that the gap is wider this year than it was last year suggests that no appreciable effort is being made to address the inequity.

That needs to change, and there are ways to change it. There's a lot of buzz about equal pay audits in the U.K., where the percentage of females in the IT profession has declined from 27% in 1997 to 16% today, according to Intellect, a U.K. IT trade association. An Intellect survey published in May of this year found that 80% of women working in IT felt that an equal pay audit should be compulsory.

The IT sector needs to champion the cause of equal pay audits in the U.S., where the percentage of women in IT has also been dropping steadily over the past decade. If we're lucky, that effort might help stem the damaging loss of women from this profession. ▸

Don Tennant

"AS YOU CAN SEE, PEOPLE, 90's NOSTALGIA IS REARING ITS UGLY HEAD."

MICHAEL GARTENBERG

Vista's Pros And Cons

WHILE THE naysayers were still calling for Microsoft not to ship Windows Vista until sometime in the spring of 2007, Microsoft announced that it is definitively on track to deliver Vista this year to business users and in January 2007 for everyone else. What does this mean for you?

Well, Vista is not something that can be ignored, and every organization is going to have to come up with a policy for Vista deployments pretty soon (or end users are just going to take matters into their own hands).

When Microsoft launched Windows 95, I estimated that, between Microsoft and all its partners, about $500 million would be spent on marketing. This time, it's likely to be well north of $1 billion spent in an effort to get end users and IT professionals on board with the migration.

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When I look at it, I see four major things that are compelling about Vista and four big issues with migration. Here's what to look forward to and what to watch out for.

What's Hot

Improved reliability and security. Windows XP was a good operating system, but let's face it — five years ago, no one foresaw the security and reliability problems that would come to plague PCs. Microsoft has learned a lot since the launch of XP, and it shows. Vista is much more stable and secure than any previous version of Windows.

Protected-mode Internet Explorer. One of the biggest vulnerability points has been Microsoft's IE browser. While the just-released IE7 addresses a lot of security issues, IE7 running on Vista takes things to the next level. Running in protected mode, the browser is totally isolated from the rest of the operating system and actively

DO YOUR CUSTOMERS, EMPLOYEES AND INVESTORS DEMAND THAT YOUR BUSINESS BE AVAILABLE 24/7 — WITHOUT INTERRUPTION?

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No one wants business interruptions. In fact, a recent IDC study* shows that organizations are looking to reduce total downtime—planned and unplanned—by 53% in the four-year period ending in 2007. Easier said than done, right? Especially when you're faced with three constant challenges:

- IT downtime targets keep getting more aggressive;
- Budget constraints continue to impact your ability to address these targets; and
- The trade-off always seems to involve giving up flexibility and control.

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You want your information available where, when and how you need it—and that's not an easy task. You have critical applications that must be "always on" and can never go down, second-tier applications that need to be in an "always ready" mode to be brought back up quickly if they're interrupted, and less time-sensitive applications that have a lower impact on the business and can be recovered with a tape-based recovery solution at a secondary site.

And you want flexibility. This means not having to invest, build and maintain a redundant data center yourself, not yielding full control of your IT environment to a third party, and not being forced to standardize on a single platform. Plus, you want this flexibility at a cost that doesn't exceed your total IT budget.

How can a business achieve these levels of uptime and flexibility? It's called Information Availability. SunGard defines this as "keeping people and information connected—no matter what." And most important, you're always in control—you determine and pay only for the level of Information Availability you need.

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Not all systems and applications are equally important—some are critical and some are less time sensitive. SunGard also knows that many businesses require a solution that is somewhere in between "always on" and "always ready." For these, we can show you how to achieve a higher level of availability with our new *AdvancedRecovery*℠ solutions.

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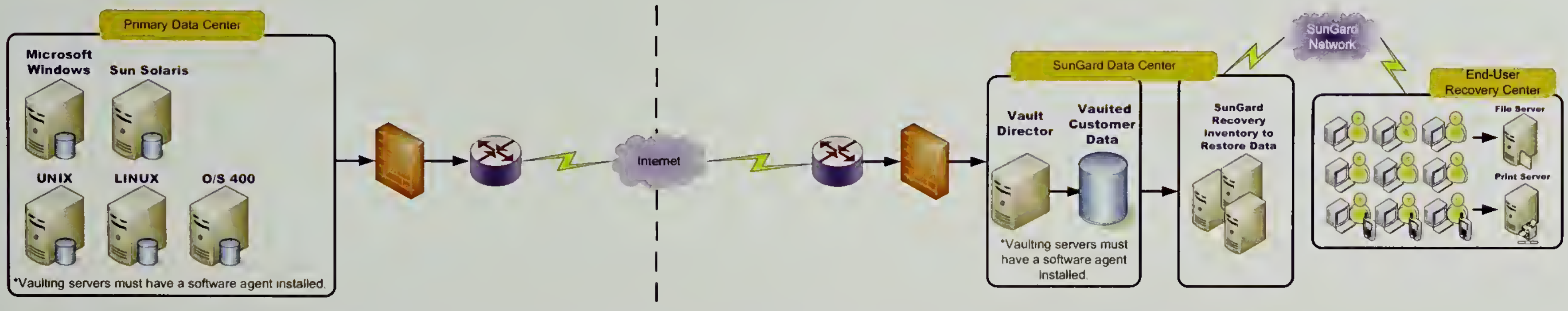
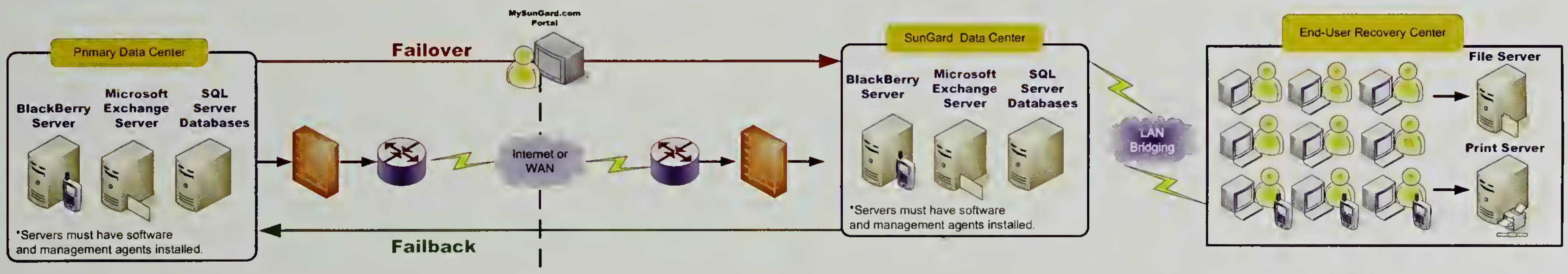


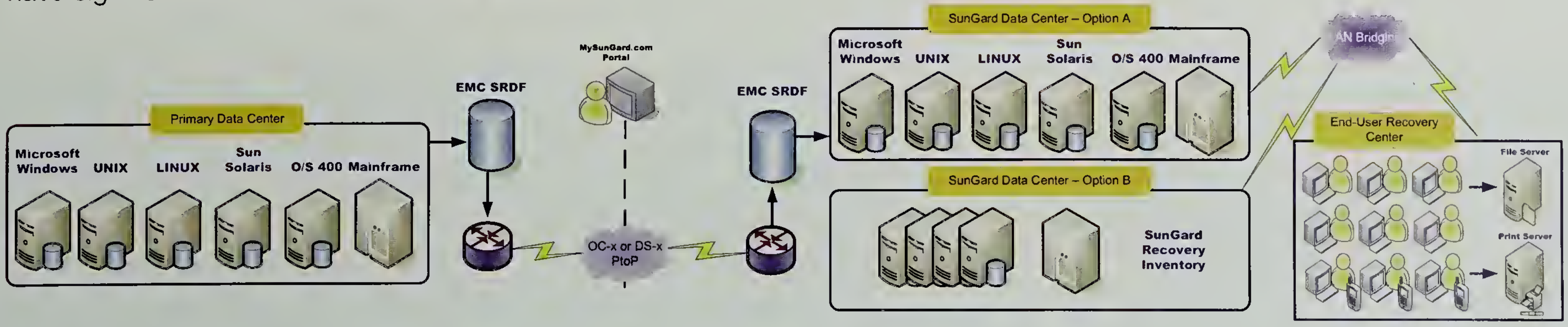
Utilize Your Most Critical Applications, Even in the Event of a Disaster

AdvancedRecovery with Server Replication provides users of BlackBerry®, Microsoft® Exchange and SQL Server Database servers a safe, off-site place to store and manage new, revised and deleted data. So at time of disaster, you can take advantage of a failover recovery that optimizes the recovery time and point objectives set by your business. Employees located at an end-user data center can then access the data from the secure servers, located at a SunGard facility, and continue with normal business operations. After your primary location is back up and running, newly created data can then be failed back, ultimately helping to reduce the risk of critical data being lost during a disaster.



Tailored to Your Business

AdvancedRecovery with Storage Replication provides companies with multiple server platforms, and a safe, off-site place to store and manage new, revised and deleted data. System availability is improved by mirroring critical data to a remote SunGard facility. If the data is needed for recovery, a storage system with the mirrored data can be connected quickly to SunGard processors, enabling fast resumption by employees located at an end-user recovery center. *AdvancedRecovery with Storage Replication* is also an ideal solution for companies that need to meet stringent regulatory requirements or have significant transactional business records.



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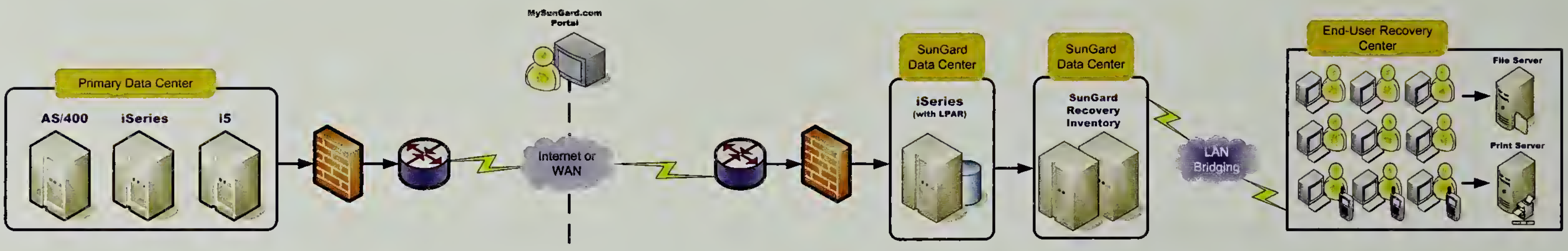
AdvancedRecovery with iSeries Replication provides the missing piece to recover your legacy or current AS/400, iSeries or i5 servers. A SunGard-owned iSeries server is utilized as a data replication repository, enabling the replication of your data to a safe, off-site location without your having to invest in additional equipment. During an unplanned event, the data is then made available to employees working at a SunGard end-user recovery center.



* IDC White Paper sponsored by SunGard, "Optimizing Business Performance Requires Optimizing Information Availability Investments," #202391, July 2006.

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protects against malicious code. This alone is worth the price of admission.

Aero Glass. Computers on TV never run XP; they run slick-looking user interfaces (but, alas, draw text on-screen as if it's moving at 300 baud, with annoying sound effects). It's mostly eye candy, but it's really nicely done eye candy. Vista's user interface is actually pretty slick and might even look good on *CSI*. Reverting to XP after using Vista with the all of the Aero elements enabled is a chore. This is how computers should look in the 21st century.

Media centricity. Media is a first-class citizen in Vista. Tight integration with Windows Media Player and the Windows shell make it really easy to browse, navigate, tag and play all the content that's important to you. Music, pictures and video all work just the way you think they should.

What's Not

Gratuitous UI changes. I love the user interface, but I have a lot invested in the old Windows experience, and some of the changes just make no sense to me. It also seems that, given the size of some of the targets you have to home in on with your cursor, Microsoft is hiring a lot of young workers who have great eyesight and use high-resolution monitors.

Performance. All this goodness comes at a price. While most features are enabled to some degree on stock PCs, older machines just won't be up to snuff. If you want to run the latest and greatest with all UI features enabled, you're going to need an upgrade. Older laptops in particular are unlikely to be able to run Vista well with all the UI stuff turned on.

Compatibility. This is not a new problem, but Vista will confront business users for the first time in a long while with major backward-compatibility issues. In general, drivers and low-level utilities will be the worst hit, but all critical applications will need to be tested carefully to see what works and what doesn't.

Cost. There's more to the cost of migration than the price of the operating system. Installation, testing, hardware and software upgrades have to be factored in. That means wholesale migrations are going to be costly.

Bottom Line

There's a lot to like in Vista. While most organizations will likely be best served by a phased migration over time, many users will be able to benefit immediately. Either way, Vista is on the short-term horizon, and it's best to start planning now, before the main consumer launch early in 2007. ▸

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READERS' LETTERS

Since You Can't Get There From Here

VIRGINIA ROBBINS' simple analogy ["Cooking Up Great IT," Opinions, Sept. 18] comparing Gordon Ramsay's service improvement techniques for restaurants to the job of turning around IT departments contained many truths, especially regarding communication and the need to look at things from an external viewpoint.

As a former CIO, I have often thought of another analogy: Two tourists were lost in the Irish countryside. Eventually, they came upon a wizened Irishman. "Could you please help us, sir, and direct us to the town of Kerry?" they asked. "Oh," replied the man, "if it's Kerry you'll be wanting, then I wouldn't start from here."

When handed the IT reins with the objective of implementing service improvement, I've often thought that, given the chance, "I wouldn't start from here"!

Rupert Dodds
Partner, KPMG, Wellington, New Zealand, rdodds@kpmg.co.nz

Graylisting Spam

YOUR ARTICLE "Spam Fighters Losing Ground" [*Computerworld.com*, Sept. 21] misses an effective but underused spam-fighting technique: graylisting, or tar pits. It increases the cost of sending spam without tying up the resources of the receiving mail server. It works better than filtering because it works on the sender behavior rather than the content. If every busy mail server used graylisting to tar-pit spam senders, there would be a lot less junk to filter. Unfortunately for antivirus vendors, you can't generate cash flow from it – and so it will never be widely promoted.

Louis Bertrand
Professor, Durham College of Applied Arts and Technology, Oshawa, Ontario

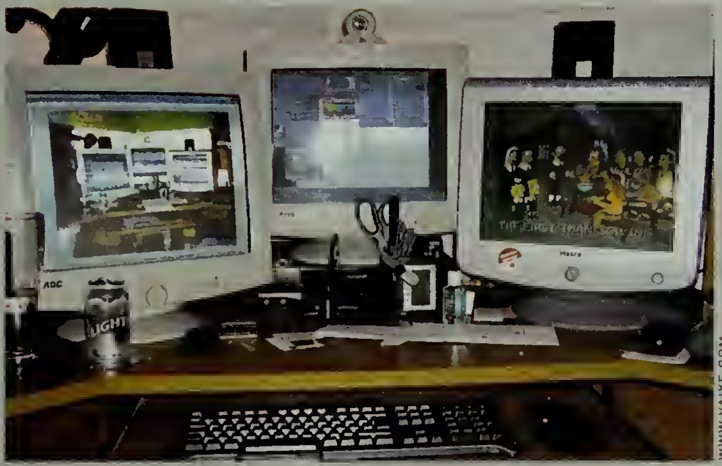
I'm Surfing, but I'm At My Desk, Right?

WHILE THERE are certainly some abusers ["Employers Crack Down on Personal Net Use," *Computerworld.com*, Sept. 26], for the most part, it is simply that employers now have a method of measuring what used to happen in a nontechnological manner. Where before people would walk to someone else's desk or use the phone to talk, they now use e-mail or IM. Before, they might peruse paper catalogs at work; now they use a Web store. Those who might have used a portable TV or radio now have streaming content.

Mike Rathwell
Jersey City, N.J.

RESTRICTIONS ON the use of the Web at work will go the way of the restrictions on personal phone use that were common decades ago. Young people who have grown up with the Web will demand unrestricted access. Organizations need to focus on employee productivity, not enforcing an Orwellian environment.

Ian Evans
San Jose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Mmm, Multiplexing

I USE A quad-display system (the fourth display being a projector for movies), and even if my girlfriend finds me insane, I plan on buying six 19-in. LCD screens, with add-on USB touch panels (along with pen tablet and voice-activated mic). So I'm deeply aware of the scalability of the GUI ["GUI Gets a Makeover," Technology, Sept. 25]. Luckily, most applications have screen-position memory.

For instance, Photoshop opens the blank canvas on Screen 1 and the palettes on Screen 2, while Word opens on Screen 3. But imagine having Outlook on Screen 4, FrontPage on Screen 5 and *The Simpsons* on Screen 6 – mmm, six screens!

Martin Doucet
Project manager, Les Éditions VAIXE, Montreal, info@vaixe.com

How Do You Control Charlie, the CEO?

FRANK HAYES ["Control Charlie," Frankly Speaking, Sept. 25] has hit the nail directly on its logical little head concerning controlling the introduction of malware into corporate networks: When "Charlie" does something stupid, everyone else should experience an immediate loss of access, and Charlie's actions should be clearly and publicly identified as the cause. In a free market where everyone had equal status and made rational choices, this would work perfectly.

But a company is basically a primate troop with a well-defined hierarchy. The correlation between dominance and intelligence in primates is zero, if not actually negative.

What happens when Charlie is a high-ranking but stupid manager? The result depends upon the specific dominance hierarchy of the company involved, but it is much more likely that a low-ranking member of the IT department would be punished than Charlie.

At most companies, IT would probably be forbidden from shutting down access when Charlie does something stupid and forbidden from disclosing that Charlie was the stupid chimp who caused the outage in the first place. Hayes' solution is a wonderful one that would nevertheless require skilled and dedicated political maneuvering. As always, there are no technology problems, only primate problems.

Carl Minie
Software developer, Salt Lake City

Grandma Networks

THE ARTICLE "Five Reasons You Need a New Approach to Antivirus Security" [*Computerworld.com*, Aug. 24] quotes Jason Bradley as saying, "How does grandma know what the registry is?"

Watch it. This grandmother of three is a network specialist, and you'd better believe she knows what a registry is. Stop stereotyping.

Vicki Wood
Network specialist, Union-Endicott Central School District, Endicott, N.Y.

COMPUTERWORLD welcomes comments from its readers. Letters will be edited for brevity and clarity. They should be addressed to Jamie Eckle, letters editor, Computerworld, PO Box 9171, 1 Speen Street, Framingham, Mass. 01701. Fax: (508) 879-4843. E-mail: letters@computerworld.com. Include an address and phone number for immediate verification.

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_INFRASTRUCTURE LOG

_DAY 28: These slow, inefficient boxes don't have enough power to run my high-end business apps. They don't have enough power to do anything except crash.

_Need sleep. Will try to dream that I am I.T. King of a planet that only produces really powerful servers.

_DAY 30: I've got it: the IBM System x™ with the AMD Opteron™ Processor. It has more power and more efficiency than I ever imagined in a standards-based server. IBM Xcelerated Memory Technology™ can let us access data up to 15 percent faster than other servers for maximized performance.* I can finally sleep in my own bed again.

_I have taken back control. I am Ned, benevolent I.T. King of this...uh, data center.

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TECHNOLOGY

11.13.06

Consortium for a Cure

The National Cancer Institute developed an open-source, open-access information network to speed progress on cancer research and care. The grid computing project was named a *Computerworld* Honors Program award winner this year. **PAGE 36**

SECURITY MANAGER'S JOURNAL

Tackling Security for Mobile CRM

A new customer relationship management system means Mathias Thurman faces a whole new round of drawing up security requirements. **PAGE 34**

OPINION

How to Avoid Getting Ransom Notes

Bruce Hoard says you can thwart cyberextortionists by deploying robust security that can fend off threatened attacks. **PAGE 38**

DAN PAGE

Making THE PC Connection

New services such as **GoToMyPC** and **LogMeIn** are taking the hassles out of remote access to employee PCs. **By Sue Hildreth**

LIKE SISYPHUS rolling his rock up the mountain over and over, IT support professionals deal with the same end-user support issues day after day. And when it comes to supporting users at remote locations, those problems just seem to multiply. Far-flung users suffer from shaky Internet connections, misconfigured VPN clients, lost security tokens, forgotten passwords, virus-ravaged laptops and, of course, children who like to "modify" Mom and Dad's settings.

The Players

A sampling of vendors offering remote access services:

- **Citrix Online,** a division of Citrix Systems Inc., Santa Barbara, Calif.
- **LogMeIn Inc.,** Woburn, Mass.
- **01 Communique Laboratory Inc.,** Mississauga, Ontario
- **Laplink Software Inc.,** Bellevue, Wash.
- **Sentillion Inc.,** Andover, Mass.
- **WebEx Communications Inc.,** Santa Clara, Calif.

With more employees than ever working away from the office, at home or on the road, supporting remote end users is consuming more and more precious IT resources.

To address this problem, a handful of companies — led by Citrix Online, a division of Citrix Systems Inc., and LogMeIn Inc. in Woburn, Mass. — are taking a different approach to remote access. It's one that doesn't use a virtual private network and may make life simpler for end users and for IT support staffers.

Under the new concept, the user's remote desktop or laptop isn't connected to corporate servers. Instead, the remote user is connected to his PC back at the office, with all of the same files, applications and desktop icons. This is accomplished mainly with a Web browser and screen-sharing technologies like those that have been used for remote support and online presentations. Even a PC in an airport kiosk or at a friend's house is sufficient to give a user full access to his office desktop.

For both busy remote users and overworked IT departments, the simplicity of these services can be a godsend.

Mississippi Baptist Health Systems Inc. in Jackson, Miss., for instance, had been providing remote users with VPN access to the hospital's systems. But it wasn't an ideal solution for either staffers or users. "The complexity of sup-

Continued on page 32

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Continued from page 30

porting a VPN is great, and many issues have to do with end-user training," says Michael Long, director of network services.

So, three years ago, when the idea of subscribing to Citrix Online's GoToMyPC service came up, the hospital jumped at it. Now, more than 100 Baptist Health administrators and medical professionals use the service. Users log onto the GoToMyPC Web site, which then contacts each individual's computer — either at the hospital or in a physician's office — and opens an encrypted session between the two.

"It's a familiar environment, and they don't have to launch anything on the client. It's very easy for them to use," says Long.

Unlike a VPN, which requires that software be loaded onto the client device and configured, remote desktop services just need software on the host PC. A Java applet is typically downloaded onto the client after the user logs into the service, and that applet communicates with the host desktop. Once logged on, the user has access to all applications available from the desktop — local ones as well as server-based applications and databases.

The Hurricane Factor

Ease of use and lower IT support costs aren't the only benefits driving this market. Some organizations also see remote desktop access services as a way to reduce the number of laptops floating around with sensitive corporate data stored on their hard drives. Also, the services offer ready-to-go business continuity plans in case of a disaster or other emergency that prevents workers from getting to the office.

"I call it the perfect storm of benefits, and I expect the marketplace for this to grow on the order of two to three times the rate of the PC market in general," says Dana Gardner, an analyst at Interarbor Solutions LLC, a Gilford, N.H.-based research and consulting firm specializing in enterprise software.

"It's not a brand-new market, but it's started to take off in the past few years," says IDC analyst Stacy Sudan. "Some companies no longer want employees to take laptops on the road for security reasons. And it's also being offered as a business continuity option."

For instance, the International Association for Exhibition Management, a Dallas-based trade group with 3,500 members, turned to 01 Communique Laboratory Inc.'s I'm InTouch service so staffers could work from home when Hurricane Rita threatened in 2005.

"After Katrina hit, everyone was scared. So when Rita started coming, we bought licenses so everybody could work from home for a day or two," says Chief Financial Officer Scott Stanton. "It's part of our disaster plan now."

The Johns Hopkins Bloomberg School of Public Health in Baltimore also found remote access to PCs helpful during a natural disaster — a snow and ice storm that left 30 inches of snow on the ground.

"We had one professor who needed to make grant deadlines, and she was able to do all her work remotely," says Ross McKenzie, director of IS at the school. "It would have been a support nightmare if we'd had to go around and set up VPNs at everyone's houses. This was a nice, clean solution."

For some organizations, the services help the IT department work with highly distributed operations. The IT staff at Meineke Car Care Centers Inc., based in Charlotte, N.C., uses the LogMeIn service to gain access to PCs at hundreds of automotive centers nationwide — without long drives to visit each location, according to technical support specialist Matt Langley.

At Kettering Medical Center Network in Dayton, Ohio, Sentillion Inc.'s vThere remote access software lets off-site physicians, students and administrators tap into their hospital PCs. Kettering Medical has 220 applications and 50 facilities in the Dayton area, so remote access is a major issue, says Director of Technology Bob Burritt.

Market Snapshot

IDC's August study of the relatively young market for remote access services concludes the following:

- **Citrix Online dominates the market, with a 90.8% share, because of its GoToMyPC product.**
- **LogMeIn, the next-largest vendor, has seen sales of its product grow and is rapidly gaining attention with its successful free version, LogMeIn Free.**
- **Currently, remote access services are most popular with the prosumer and small and medium-size business markets.** But vendors are now targeting the corporate world as well.
- **The technology could become popular at companies leery of letting employees travel with laptops that contain confidential information.**
- **The services could be used for business continuity purposes,** if disaster strikes and employees can't make it into the office.
- **Two barriers to adoption:** Many companies already have VPNs, and laptops are replacing desktops at some companies.

Desktop IN YOUR Pocket

For many people, being mobile means using a handheld device, so remote access vendors such as LogMeIn, Citrix Online and 01 Communique support handhelds. But how well does a tiny screen work for viewing a big desktop?

"The big challenge is how to pan around a PC desktop with a handheld," notes Gary Chen, an analyst at Yankee Group Research Inc. He says he doubts handhelds will be popular devices for accessing desktops remotely, though they may be useful in certain situations, such as when the user's laptop isn't available.

Ross McKenzie, director of IS at the Johns Hopkins Bloomberg School of Public Health, agrees that it's not the best way to get to a desktop application but thinks it has great value for specific uses.

"There's certainly some applications I wouldn't want to run on a handheld, because you're accessing a 17-in. monitor with a 4-in. screen," he says. "But it can also be very useful. For instance, our IS people use them to check on server status – without having to go back to their desks – or to read a document remotely. It's a part of the overall tool bag."

– SUE HILDRETH

Good Grades for Security

Analysts and users cite few security concerns with the remote services. Most of the service providers offer several layers of security, including encryption, certificates and multiple passwords.

The connection from the remote device to the service, and from the service to the host desktop, is encrypted. And two or three passwords are normally required to gain access to a user's work applications — one password to log into the service, another to get to the PC and a third for access to the corporate network. Some services use certificates to verify their own servers' identities to guard against a hacker attempting to pose as a server to a remote user — a so-called man-in-the-middle attack.

Corporate versions of these services also provide administrative and security functions such as the ability to lock out remote printing or file transfers, one-time passwords for users who may be using public PCs, access restrictions and two-factor authentication.

"With the [GoToMyPC] management console, we can custom-configure [security settings], force password changes, manage the log and see where access is coming from," says McKenzie.

Because many Johns Hopkins employees travel to countries without reliable Internet connections, GoToMyPC enables them to access desktop files and run statistical analysis on school computers from PCs in Internet cafes or anywhere else. In addition, McKenzie says, many faculty members work from home using the service, and the information systems department relies on it to keep tabs on the status of university servers.

The only real security issue that Johns Hopkins has encountered involved desktop shortcuts. An employee discovered that his roommate had clicked on a GoToMyPC shortcut and was able to access the employee's work PC. So McKenzie had the shortcut feature disabled for all users. (Citrix Online notes that while it's possible to create a shortcut to an account, it isn't possible to create one that will open an encrypted session to the host PC.)

One advantage of the remote services is that they negate the chance of a malware infection. Viruses on a home PC can't infect the corporate computers. Likewise, a corporate virus can't get onto the remote client unless the user saves an infected file to disk.

All in all, the real selling points for services like LogMeIn and I'm InTouch are price and convenience. According to IDC's Sudan, fees typically range from $10 to $20 per PC per month, possibly less for large-volume deals.

And it is substantially more convenient for employees, who get access to everything on their work PCs, and for IT workers, who don't have to handhold users to set up VPNs and configure e-mail clients.

Long says that support calls from remote users plummeted 80% to 90% after Mississippi Baptist switched to the Citrix Online service. That's a lot of IT manpower that's now available for other projects, he notes.

"It pays for itself in resource time, if nothing else," Long says. "With the VPN, we sometimes have had to spend several hours with end users initially getting it working. With this, the support and IT resource costs are so much lower." ▸

Hildreth is a freelancer specializing in enterprise software and services. She can be reached at Sue.Hildreth@comcast.net.

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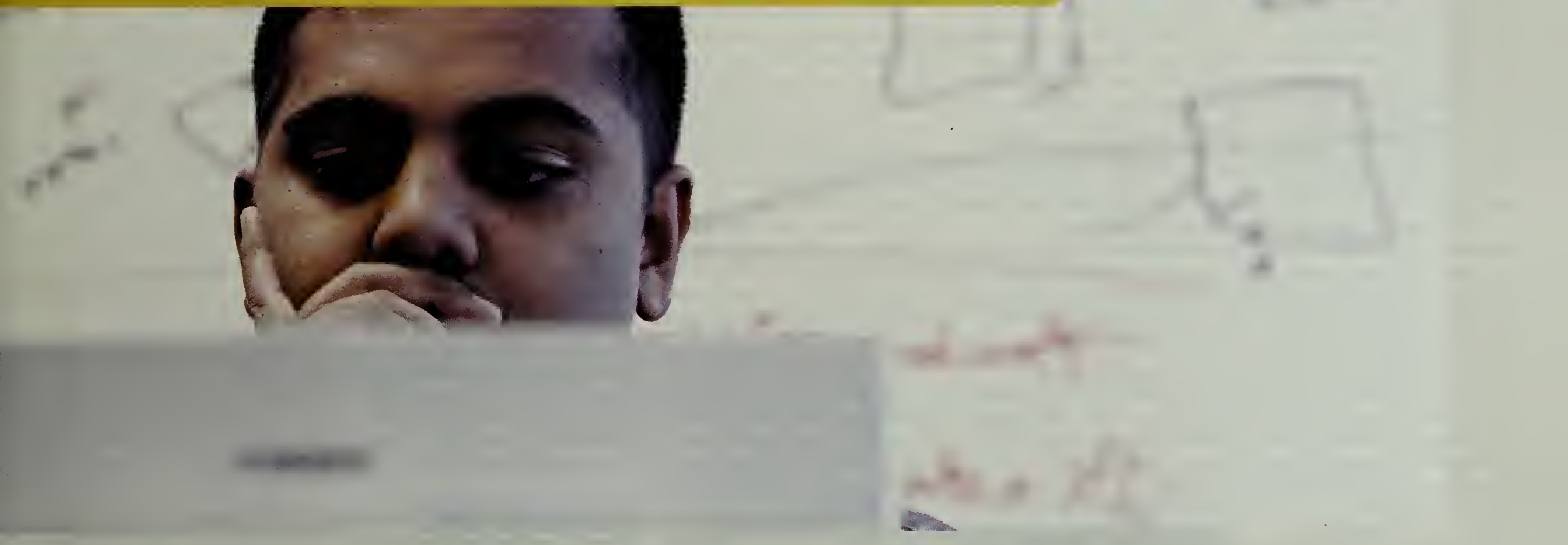

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Tackling Security For Mobile CRM

A new application rollout means a whole new round of drawing up requirements for our security manager. By Mathias Thurman

SECURITY MANAGER'S JOURNAL

ANOTHER enterprise application made its way onto my radar screen this past week, and I've been busy putting together a plan to address security for it.

To speak in acronyms, I'm moving from PLM to CRM. About two months ago, I finished up my security architecture review and requirements for a product lifecycle management application. The PLM project is still in the development phase, and I continue to contribute to it from time to time to ensure that my requirements are being built into the application. My real work with PLM will start in the validation phase, when I'll conduct an audit to ensure that my requirements have been properly addressed. But for the moment, I'm not doing much on the PLM project and can concentrate on CRM.

CRM stands for customer relationship management. Our main goal with this system is to improve relationships with our customers by streamlining our service department's interactions with them. Specifically, we want to use CRM to let our service engineers accept work assignments, account for time, track parts, communicate with co-workers and perform other aspects of their jobs.

The service technicians have been using a homegrown tool to accomplish these activities, but it isn't very intuitive or efficient. Built years ago, when our company was small, it was never meant to be an enterprise-class tool. Among its problems is that technicians have to establish a virtual private network session with headquarters to access the application portal. That's a serious drawback, since many of our technicians work in fabrication plants operated by our customers, whose policies prohibit them from bringing in laptops. In addition, many of these plants don't have Internet access.

So our CRM project will include a slight twist that we are calling "mobility." Besides deploying a CRM back-end application, we will include the ability for certain portions of the CRM application to run on Research In Motion Ltd.'s BlackBerry phones.

This will be new territory for us and will require a whole new set of security controls. We currently don't equip any users with BlackBerry devices.

The first set of controls is related to the phones themselves. BlackBerries allow you to configure several security-related features. You can establish various lengths for passwords, incorporate time-outs, lock phones after a certain number of unsuccessful attempts to access them, and enable data encryption. You can also remotely disable a phone if it's lost or stolen.

Of course, each of these security controls has a hit on usability and productivity. For example, if I mandate a nine-character alphanumeric password with uppercase, lowercase and special characters and a five-minute time-out, users will complain, since inputting a password on a BlackBerry device isn't easy.

> "Our CRM project includes a slight twist that we are calling 'mobility.'"

Server Requirements

I will also establish a general set of requirements for the BlackBerry Enterprise Server. For example, I will require that the server be placed on a separate virtual LAN and mandate certain configurations on the router and switch to prevent denial-of-service attacks. I'll also make sure that sufficient logging is included, which will assist with incident response should we detect any unauthorized use or cases of intellectual property theft.

To allow the BlackBerry phones to run the CRM application and talk to our CRM back-end servers, we are using technology from Jersey City, N.J.-based Antenna Software Inc., which provides mobile applications specifically designed for the service industry. I've reviewed Antenna's white papers and am impressed with the security of its offering. But just to be safe, once the project team has created design documentation, I will review it to ensure that there are no gaps.

I'm the first to admit when I don't have expertise in a technology, and security for mobile devices is certainly one of those. In order to fully address security aspects of the mobility phase of the CRM project, I will hire a contractor to help me assess the infrastructure and devise a set of policies, standards and guidelines for the phones, the BlackBerry Enterprise Server, the Antenna infrastructure and employees' use of the phones. Mobility is probably the riskiest aspect of this infrastructure, since more and more enterprise applications will surely be accessible via the phones. For example, we've already deployed IP telephony and enabled unified messaging. The more applications that are accessible on the BlackBerries, the more intellectual property and sensitive data will be exposed.

I will also need to focus efforts on the back-end CRM infrastructure. When I conducted my assessment of the PLM project several months ago, my deliverable was a set of security requirements. I like to create fairly generic requirements so that the documentation and spreadsheets for future applications can be built from them. This practice saves time, since most enterprise applications have similar security requirements. For example, the ability to check certain types of documents in and out may apply to many applications.

There are other things to look into. Encryption of data in transit and at rest will need to be evaluated. I will want the ability to monitor certain types of activity, such as log-ins and log-outs. We'll need to set up authorizations for privileged access and set parameters for exception reporting. Then there are the prudent practices of setting up role-based access control and creating separate VLANs for Web, application and database servers.

This project is still in its infancy, so I can't be sure yet that I've covered all the bases. But mobility will extend the CRM application beyond our internal and DMZ environments, so getting it right is essential. If this isn't architected properly, the ramifications of a stolen BlackBerry phone could be very embarrassing. ▶

WHAT DO YOU THINK?

This week's journal is written by a real security manager, "Mathias Thurman," whose name and employer have been disguised for obvious reasons. Contact him at mathias_thurman@yahoo.com, or join the discussions in our security blogs: **computerworld.com/blogs/security**.

To find a complete archive of our Security Manager's Journals, go online to **computerworld.com/secjournal**.

SECURITY LOG

Security Bookshelf

Security in Computing (4th Edition), by Charles P. Pfleeger and Shari Lawrence Pfleeger (Prentice Hall PTR, 2006).

If you need a midlevel college textbook on computer security or just a decent reference to help you keep up to date, you'll want to pick up a copy of this title. The authors start out by describing some of the most prevalent issues in security, then zero in on areas such as encryption, application security, management and privacy. The chapter on cryptography is a good refresher on encryption algorithms. Each chapter is well organized, and there are quizzes that I found very challenging.

– MATHIAS THURMAN

Laptop Buyer Finds Sensitive Data

The buyer of a laptop that Salt Lake City-based Intermountain Healthcare Inc. had scrubbed and then donated to a local charity discovered a file on the hard disk containing personally identifiable information, including Social Security numbers, for more than 6,000 current and former employees. According to the *Deseret Morning News*, the buyer gave the laptop to a Utah TV station, which informed Intermountain of the near breach. The company says it no longer uses Social Security numbers to identify employees, and it has contracted with Dell Inc. to physically destroy hard disks rather than scrub them. However, the SANS Institute notes that shipping the hard disks to Dell puts them at risk of getting lost, which has happened to backup tapes in several high-profile cases.

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Consortium For a Cure

The power of grid computing propels cancer research to a new level. By Mary K. Pratt

COMPUTERWORLD HONORS SHOWCASE

National Cancer Institute's Cancer Biomedical Informatics Grid

ORGANIZATION: The National Cancer Institute (NCI), part of the National Institutes of Health, is the U.S. government's principal agency for cancer research and training.

PROJECT CHAMPIONS: Dr. John Niederhuber, former chairman of the National Cancer Advisory Board and now director of the NCI; former director Dr. Andrew von Eschenbach; and deputy director Anna Barker

STAFF: About 180 NCI IT staffers, along with about 620 people from various institutions outside the NCI, work on caBIG.

ROI: The NCI has invested $20 million annually over the past three years. Participants share tools and data, which reduces duplicative efforts and speeds up research breakthroughs.

SCIENTISTS AND DOCTORS fighting cancer have a powerful new weapon. It's not an innovative drug or breakthrough gene therapy. Rather, it's an expansive technology initiative that links them together in their efforts to find a cure. The Cancer Biomedical Informatics Grid, or caBIG, is a voluntary, open-source, open-access network that allows institutions, teams and individual researchers in the U.S. to share tools, standards, data, applications and technologies.

The National Cancer Institute developed caBIG with one goal in mind: to speed progress on cancer research and care. "I really see it as the next generation of research," says David Fenstermacher, director of biomedical informatics at the Abramson Cancer Center of the University of Pennsylvania.

Computerworld named the NCI a 2006 Honors Program recipient in the science category for its development of caBIG.

"The community was really very ready for it," says Joel Saltz, professor and chairman of biomedical informatics at the Arthur G. James Cancer Hospital and Richard J. Solove Research Institute, part of Ohio State University.

The research community has been developing grid technologies and supercomputer consortia to support its work, Saltz says. And as grid technology has matured, so has researchers' willingness to share data and tools, particularly through the Human Genome Project.

The Need

Despite the evolution in those areas, researchers were still fairly isolated within their institutions when the NCI announced the caBIG initiative in 2003, project leaders say.

"We were generating this large knowledge base, and the only way we were getting that knowledge out was writing papers," says Rakesh Nagarajan, an assistant professor in the department of pathology and immunology at Washington University in St. Louis.

And even though researchers and institutions at the time were sharing some data sets, the process was cumbersome. Researchers would e-mail files or burn data onto CDs or DVDs, which would then be mailed. Moreover, the data's format varied from institution to institution, which required recipients to convert information into formats compatible with their own systems.

"The idea [with caBIG] was that you should be able to re-analyze data in new and novel ways and integrate other data," Nagarajan says.

This was the backdrop as the NCI launched caBIG in February 2004, working with some 50 NCI-designated cancer centers and more than 30 other organizations to build this infrastructure.

The Challenge

While the initiative enjoyed an enthusiastic response from the research community, the program — like all technology projects — had to contend with both systems and cultural challenges.

First, caBIG had to link institutions spread across 24 states and individuals working on various systems, including legacy systems, in different locales that were generating data in different formats using varying semantics for the same abstract concepts.

"What we saw there was tremendous [diversity] in need and systems. And we were covering the entire landscape, from discovery research to clinical trials to the intermediary steps," says Ken Buetow, the NCI's associate director for bioinformatics and IT, and director of the NCI Center for Bioinformatics, which directs caBIG.

Program leaders cooperatively developed the architecture, software infrastructure and standards for sharing data. They created interoperability that allows for machine-to-machine exchanges, the compatibility of tools and the accurate exchange of complex concepts through the use of standardized definitions and semantics.

The Technology

CaBIG leverages existing software standards and open platforms, such as the Globus Toolkit, wherever possible in the development of this suite of interoperable biomedical informatics tools and shared vocabularies and data elements.

The program also uses specific tools such as caDSR (Cancer Data Standards Repository), EVS (Enterprise Vocabulary System) and caGrid to allow geographically dispersed researchers and informaticians to query data using desktop tools.

Today, more than 800 people contribute to caBIG by developing applications, infrastructure, standards, policy documents and related resources. CaBIG also links cancer centers in 32 states. Moreover, NCI has developed a close collaboration with the U.K.'s National Cancer Research Institute, which plans to hire someone to work exclusively with caBIG to ensure coordination and technical compatibility.

The NCI has spent $20 million annually for the past three years to develop caBIG, with much of this federal money going into labor costs and software-related services, according to Buetow and Peter A. Covitz, chief operating officer at the NCI Center for Bioinformatics. Participating institutions also contribute, usually through in-kind resources or sweat equity.

Moving forward, Buetow and Covitz say the goal is to expand not only the tools and data available on caBIG, but also the number of people using it. Program leaders say they also want to improve the ease of using and making submissions to caBIG and deliver more user interfaces in the upcoming year.

"The belief is that caBIG will tie together resources and, if nothing else, will accelerate breakthroughs in cancer research," Covitz says. ▸

Pratt is a Computerworld *contributing writer in Waltham, Mass. Contact her at marykpratt@verizon.net.*

42 Days

No one decision determines success or failure of a project. Yet project leaders point to a single step that proved crucial to the success of the Cancer Biomedical Informatics Grid, or caBIG.

That step? Meeting with stakeholders in the research community before developing the technology itself.

"When you look back at the program, one of the reasons it's been as successful as it has was those early discussions with the stakeholders," says Mark Adams, a senior associate at Booz Allen Hamilton Inc. (BAH).

As the project's general contractor, BAH directly manages all caBIG contracts and ensures coordination and accountability of those contracts. Adams is BAH's caBIG program manager, making him the senior person overseeing the firm's caBIG activities.

The National Cancer Institute launched caBIG in February 2004. As the project got under way, program staffers, working in five teams, visited 49 centers in 42 days to develop a detailed accounting of issues, needs and capabilities within the biomedical informatics community.

"We took an IT person and subject matter expert to every place and asked about needs, what are you good at, where do you need help and what are your interests," Adams explains. "We didn't go and impose a framework on people. We went out and asked and then built an organization based on where we perceived a need."

– MARY K. PRATT

IBM

_INFRASTRUCTURE LOG

_DAY 59: The infrastructure is growing out of control. Nothing's being used to capacity. It costs a ton to manage, both in time and resources. All we do is react to problems. I told Gil I'm tired of spending my days putting out fires. He said he'd pitch in.

_Gil brought in a fire hose. Everyone is sopping wet, and the data center is an electrified wading pool. We've got to find something better than H_2O.

BRIEFS

SunGard Releases WealthStation 2.0

■ SunGard Data Systems Inc. has unveiled WealthStation 2.0, which adds unified managed account features to the wealth management software for financial services firms and financial advisers. The software can consolidate assets from multiple accounts and institutions into one central planning and decision-making environment, according to SunGard. The Wayne, Pa.-based vendor says that WealthStation 2.0, with its financial planning, asset allocation and CRM modules enabled, is priced at about $1,000 per user per year; volume discounts are available.

Inter-Tel Unveils SIP-based Switch

■ Inter-Tel Inc. last week announced the Inter-Tel 7000 communications switch, which is based on Session Initiation Protocol standards. The product is designed to help integrate SIP-based applications and devices into a business network and can support up to 2,500 users, the Tempe, Ariz.-based vendor says. Pricing starts at $600 per user. The switch is available now.

Spectra Logic Upgrades Appliance

■ Data storage vendor Spectra Logic Corp. last week announced the Spectra D500 network storage appliance. The new product will incorporate Spectra Logic's BlueScale storage management software to make it easier to manage the backup and archiving disk system. The D500 includes the same BlueScale interface that thousands of Spectra Logic T-Series customers have used for years, making it compatible with all major backup software applications, the vendor says. The D500, which can be configured with 2TB, 4TB or 8TB of raw storage capacity, starts at $11,995 for 2TB of storage and will be available in December, according to the Boulder, Colo.-based vendor.

BRUCE HOARD

How to Avoid Getting Ransom Notes

I SUPPOSE it shouldn't come as any surprise that cybercriminals are demanding ransom — in some cases up to several million dollars — and threatening to launch massive, external targeted attacks if we don't pay up. No, it isn't surprising, but it's depressing. What started out as hacking has turned into something that threatens the very survival of innocent businesses.

BRUCE HOARD is a freelance writer based in Bangor, Maine. He can be reached at **bbhoard@comcast.net**.

It's a lose-lose scenario for the victims. Their first choice is refusing to pay the ransom and risking crippling attacks launched by multiple virus-infected computers located around the world. This choice entails contacting law enforcement authorities and hoping that the authorities can find and arrest the threatening party.

Fat chance. And this option could also lead to a firestorm of negative publicity that can be just as fatal as the global virus attack.

The second choice isn't much more alluring. It involves paying off the extorters and hoping they'll go away and not come back. But what are the chances of them not coming back when they have already succeeded once? At this point, the victim organization is in even worse shape than it was before paying the first round of ransom, because it has compromised its position by acceding to the illegal demands.

Admittedly, this worst-case scenario is experienced by relatively few companies (just how few we'll never know, since many of them understandably keep a tight lid on such occurrences), but it points to a larger problem faced by businesses everywhere. Even in the troubled and terrorist-plagued world that we live in, security remains a second-rate concern in many tight-fisted organizations.

It's not cheap to set up a security infrastructure. According to a couple of experts I've spoken with, the estimated costs for protecting a company with 15,000 employees run anywhere from $100,000 to $1,000,000 — not cheap, indeed. But, as the same experts are quick to ask, how much does it cost to recover from a large-scale disaster, whether it be criminal extortion or a Category 5 hurricane?

Not that it's necessary to go full-bore in order to implement significant security measures. However, very few companies go beyond the level of developing simple access lists, and very few are currently encrypting their internal disk systems, even though it's internal abuses and attacks, not external ones, that cause the most damage.

So, how to get started? The first thing to do is figure out whether you want to run your security show in-house or farm it out to a managed services provider.

Typically, the largest corporations with the most internal IT talent are the most likely to retain this key function along with control of their business-critical data, while midsize firms are increasingly seeing the value of outsourcing. It takes a big leap of faith to entrust your most important data to a third-party firm, but more and more businesses are doing it.

The next step is developing a security plan based on a comprehensive review and classification of data. Where is it? Which data is confidential? What policies are in place to protect it? And how easy is it to monitor and enforce them? The best way to protect your most sensitive data may be to wall it off in data repositories or on servers that are inaccessible to all but the most trusted authorized personnel.

Which brings up the sticky issue of access. In some organizations, IT infrastructures have grown so out of control for so long that nobody really knows who has access and at what levels, which opens up the disturbing possibility of sysadmins reading executive-level e-mails. Even in tight-security IT shops, the fact is that sysadmins require high-level access to do their jobs.

Once a security plan is hammered out and access control becomes more clear-cut, it comes down to a matter of trust. You put your best people in place and trust them to manage your systems — it's as simple as that.

So, how will this kind of security plan protect potential cyberextortion victims? For starters, it enables these firms to make it known to the world that they've spared no effort in developing the strongest possible security infrastructure.

Hackers are like a lot of people: They take the path of least resistance. So if they know some company has turned itself into an airtight security fortress, they're less likely to engage it through hostile acts.

Aside from that, cutting-edge security technology is tough to circumvent. It only makes sense that the more judiciously you deploy it, the safer you'll be. ◗

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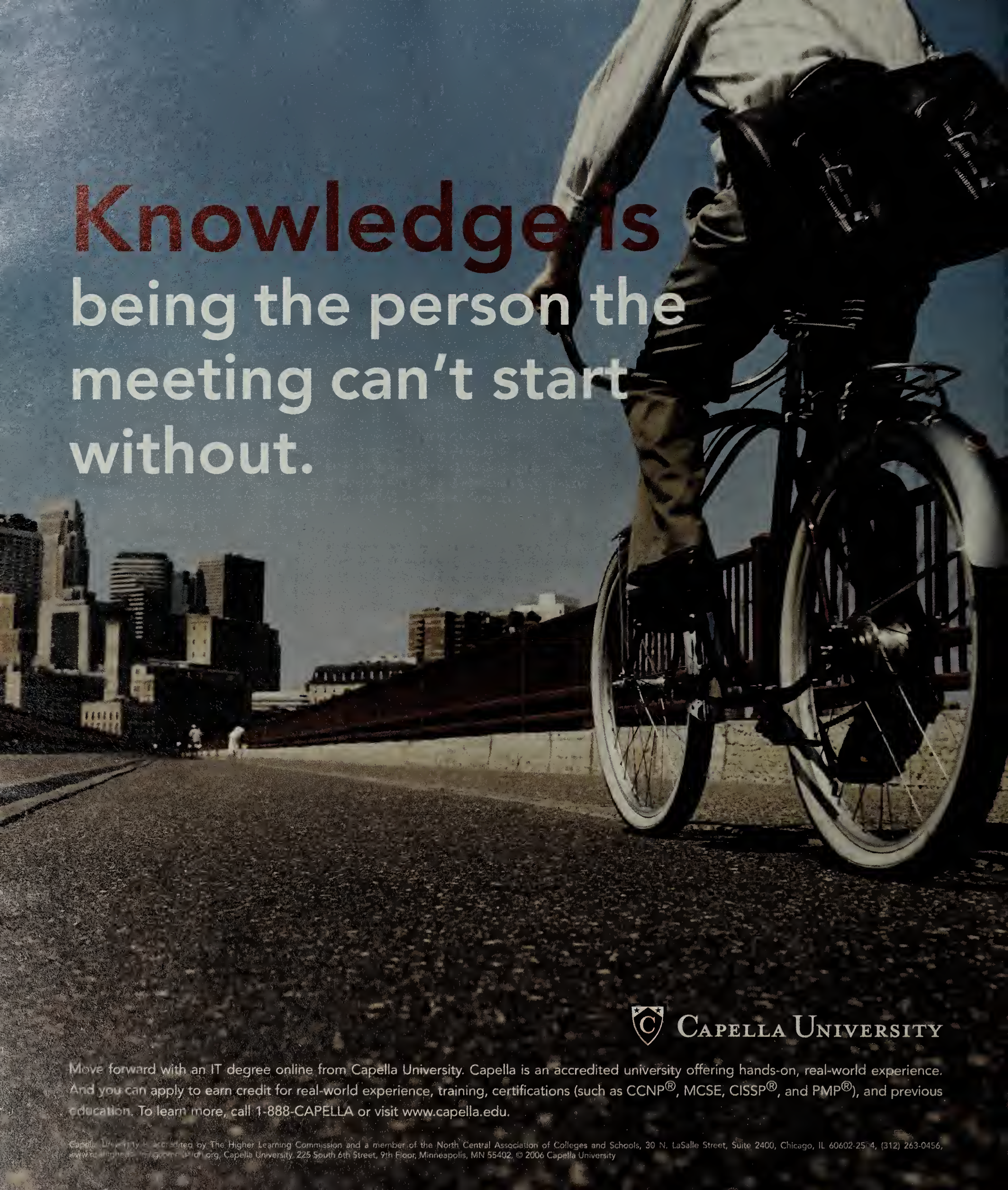

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RICHARD LILLASH

COMPUTERWORLD

SALARY SURVEY

The Lucky Ones

HOT SKILLS GOT THE BIGGEST PAY BOUNCES IN 2006, AS COMPANIES PREPARED TO FIGHT FOR KEY TALENT. By Stacy Collett

MIKE YORK has 15 good reasons to be happy with his job. As a network architect at Experian Information Solutions Inc.'s data center in Allen, Texas, York saw his salary jump 5% this year, plus another 10% as the credit reporting company raised his pay to equal that of his counterparts at the California headquarters. "In Texas, I'm the only network architect" for the company, York says of his specialized skills.

He's not the only one with reason to smile. While IT workers across the board saw their pay increase an average of 3.1% again this year, a few lucky ones with the hottest skills saw above-average raises, according to *Computerworld*'s 20th Annual Salary Survey, which studied the compensation and bonuses of 14,740 IT workers. Network architects like York received average pay increases of 5.3%. Web developers, Internet managers and directors of e-commerce saw jumps of 4% or more.

Compensation watchdogs say these IT rock stars have catapulted to popularity because of consumer demand. "The dominant business model is now Web-based. That's what it's all about," says David Foote, CEO and chief research officer at Foote Partners LLC in New Canaan, Conn. "Customers are dictating the way they want to interact across the network with the vendors. They're willing to define the relationship in part by how secure it is and how easy it is to do business with them. If I'm purchasing from a Web site and the site is too slow, I'm off of it."

On the e-business side, the need to comply with the Sarbanes-Oxley Act and other regulations drove demand for Web skills to the max before the compliance deadlines last spring. Now these same companies have returned

Continued on page 44

ONLINE EXCLUSIVE

Smart Salary Tool 2006

Is your salary on par with what your peers are making? Use our Smart Salary Tool to compare your pay with that of IT workers in similar jobs around the country. Our 2006 survey reports on the salaries of nearly 15,000 IT professionals: www.computerworld.com/06/salaries

By the Numbers

SALARIES

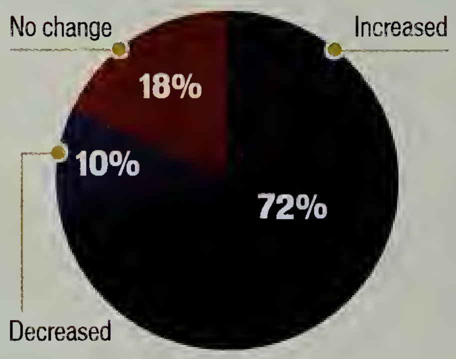
3.1%

2006 AVERAGE CHANGE IN SALARY, ACROSS THE BOARD

SALARY INCREASES BY JOB LEVEL

SENIOR MANAGERS BASE: 2,365	**3.5%**
MIDDLE MANAGERS BASE: 4,319	**3%**
IT STAFFERS BASE: 8,056	**3%**

HOW HAS YOUR 2006 BASE SALARY CHANGED FROM ONE YEAR AGO?



AVERAGE INCREASE	6%
AVERAGE DECREASE	7%

BONUSES

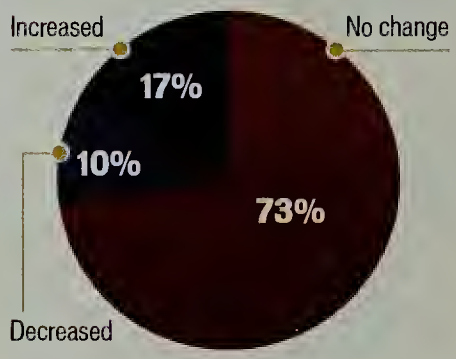
3.2%

2006 AVERAGE CHANGE IN BONUS, ACROSS THE BOARD

BONUS INCREASES BY JOB LEVEL

SENIOR MANAGERS BASE: 2,365	**6.1%**
MIDDLE MANAGERS BASE: 4,319	**2.1%**
IT STAFFERS BASE: 8,056	**0.5%**

HOW HAS YOUR EXPECTED 2006 BONUS CHANGED FROM ONE YEAR AGO?



AVERAGE INCREASE	32%
AVERAGE DECREASE	38%

BIGGEST WINNERS

TITLES THAT SAW HIGHER-THAN-AVERAGE GAINS IN TOTAL COMPENSATION

Director/vice president of e-commerce/e-business	5.5%
Network architect	5.3%
Web developer	4.8%
CIO	4.5%
Storage architect/engineer/administrator	4.5%

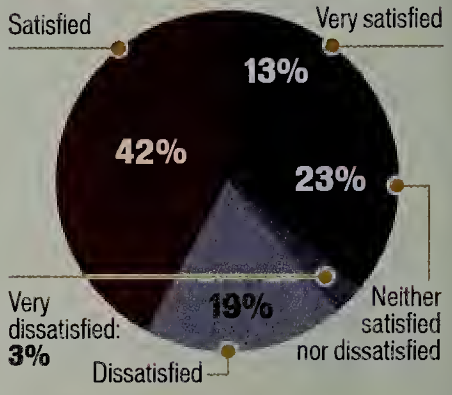
BIGGEST LOSERS

TITLES THAT SAW LOWER-THAN-AVERAGE GAINS IN TOTAL COMPENSATION

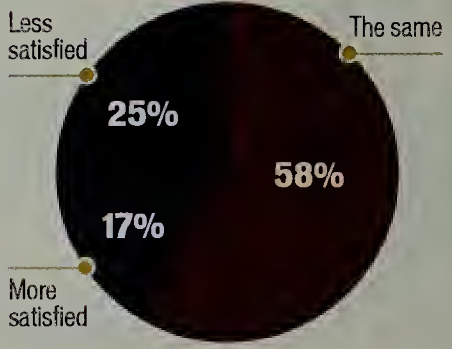
E-commerce specialist	1.1%
E-commerce manager	1.2%
Technician	1.3%
Network manager	1.4%
Technical trainer	1.9%

SATISFACTION

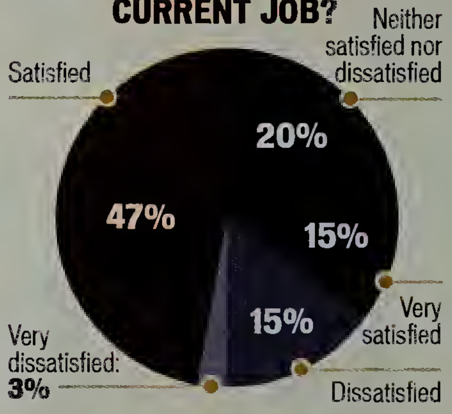
HOW SATISFIED ARE YOU TODAY WITH YOUR TOTAL COMPENSATION PACKAGE?



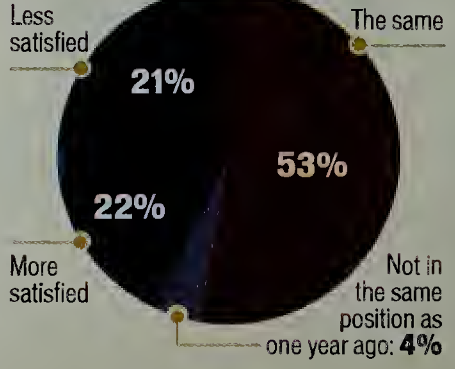
HOW DOES YOUR LEVEL OF SATISFACTION COMPARE TO ONE YEAR AGO?



OVERALL, HOW SATISFIED ARE YOU WITH YOUR CURRENT JOB?



HOW DOES YOUR LEVEL OF SATISFACTION COMPARE TO ONE YEAR AGO?



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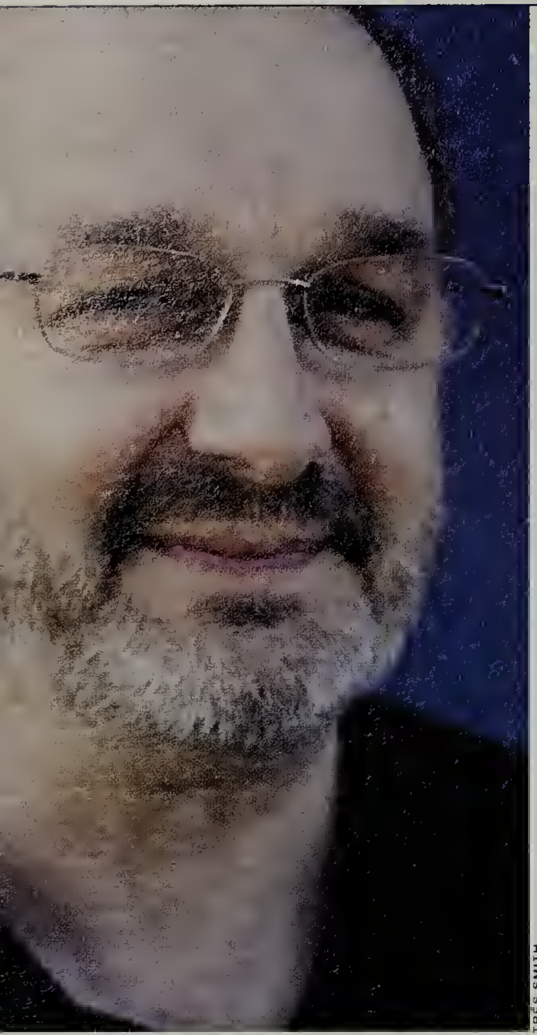


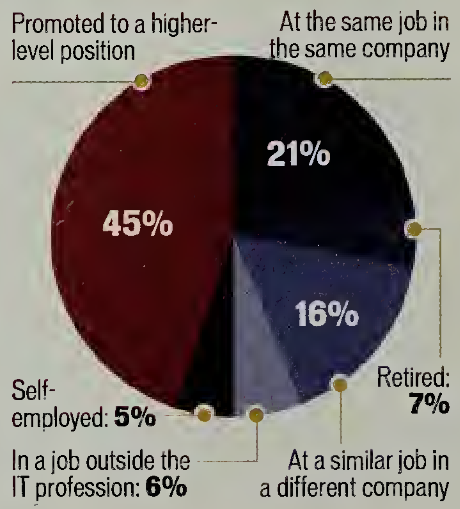
TRÉS SMITH

> **IN TEXAS, I'M THE ONLY NETWORK ARCHITECT [FOR THE COMPANY].**
>
> **MIKE YORK,** EXPLAINING THE 15% RAISE THAT BROUGHT HIM UP TO PAR WITH NETWORK ARCHITECTS AT EXPERIAN'S CALIFORNIA HEADQUARTERS

By the Numbers

THE HEART OF THE MATTER

WHERE DO YOU EXPECT TO BE IN YOUR CAREER FIVE YEARS FROM NOW?



THE TOP SEVEN CHALLENGES FACING WORKERS IN THE IT INDUSTRY TODAY

1	Alignment of IT with the business	23%
2	Keeping up with technology advancements	20%
3	Outsourcing	18%
4	Job security	10%
5	Gap between skills required and training available	9%
6	IT talent shortage	9%
7	The economy	9%

BASE: 14,647
NOTE: MULTIPLE RESPONSES ALLOWED.

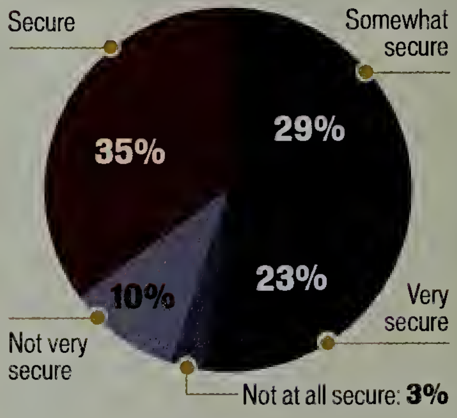
WHAT MATTERS MOST TO YOU ABOUT YOUR JOB?

Base pay	71%
Benefits	53%
Vacation time/paid time off	43%
Challenge of job/responsibility	35%
Flexible work schedule/telecommuting/work at home	34%
Potential for career advancement and development	28%
Job stability	28%
Skills development/educational, training opportunities	25%
Job atmosphere/community	20%
My opinion and knowledge is valued	18%
Bonus opportunities	18%
Financial stability of company	14%
Recognition for work well done	13%
Corporate culture and values	12%
Having the resources to do my job well	11%
Commute distance/location	11%
Effectiveness of immediate supervision	8%
Working with highly talented peers	8%
Work with leading-edge technology	8%
Corporate commitment to and understanding of the importance of IT	7%
Stock options	5%
How my work helps achieve company goals	5%
Company reputation	4%

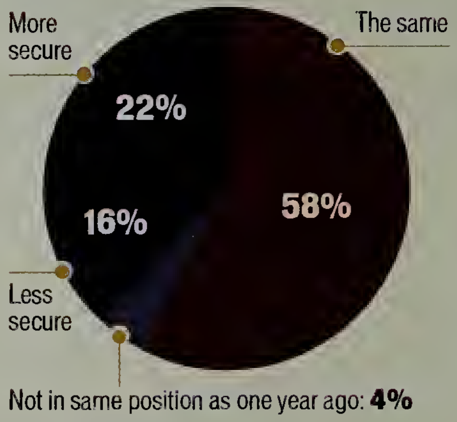
NOTE: MULTIPLE RESPONSES ALLOWED.

JOB SECURITY

HOW SECURE DO YOU FEEL IN YOUR CURRENT POSITION?



HOW SECURE DO YOU FEEL COMPARED WITH ONE YEAR AGO?



Continued from page 42

to enhancing Web-based products and services, Foote says.

Dennis Byford, a network architect at Integris Health Inc. in Oklahoma City, has seen his personal stock rise as more IT projects involve the Web. "All of our projects right now are tied into electronic medical records and physician order entry systems," he says.

Squaring Up

At raise time, Jennifer, a wireless network engineer at a hospital system in Florida, knew what her skills were worth. Unfortunately, her employer didn't. So she balked when the hospital offered her a 3% pay increase this year.

"[Some executives] don't understand what an impact wireless has in the enterprise," says Jennifer, who asked that her full name not be used. She has three years' experience managing a 100-access-point wireless infrastructure and has earned Cisco Systems Inc.'s CCNP and CCIE certifications.

"I'm in charge of their entire wireless network, and it's growing faster than [the current infrastructure] can possibly accommodate," she says. "I'm trying to get them to understand the value of what I do. I really don't think that they get it."

Executives eventually saw the light and gave Jennifer a 7.75% raise. "But I'm still a little underpaid," she adds. In fact, Jennifer is one of the lucky ones — other wireless network engineers and network engineers in this year's survey received pay raises that were a bit lower than average, at just 2.7%.

Overall, *Computerworld*'s Salary Survey and other studies point to a firming labor market. Some 41% of IT executives who responded to *Computerworld*'s second-quarter Vital Signs Survey said they found it more difficult to recruit key IT talent than they did at the same time last year. Sixteen percent of the respondents to this year's Salary Survey said they expect to be in a similar job but at a different company within the next five years, and nearly half (47%) reported that they're actively or passively looking for another job.

Similarly, according to an August 2006 online survey of 1,000 IT workers by the Computing Technology Industry Association, 60% of IT professionals are hunting for a new job. Of those job hunters, 27% said they're actively searching, 52% said they're "somewhat actively" looking, and 20% said they're "not very actively" hunting for new work. Three quarters of respondents said they wanted better pay.

Here's another sign that employers are reacting to a tightening labor pool for certain specialties: Research by Robert Half Technology shows that average starting salaries are expected to climb 3% this year, with greater increases for positions like IT auditor (11.2%), lead application developer (5.3%) and network security administrator (5.2%). Indeed, dark clouds are looming over employers of people with these specialized skills.

"We have headhunters calling all the

Continued on page 46

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Continued from page 44

time" for IT workers with network and Web skills, Byford says. Fortunately for Integris, he is happy to stay put for now. But other companies aren't as lucky.

On the Market

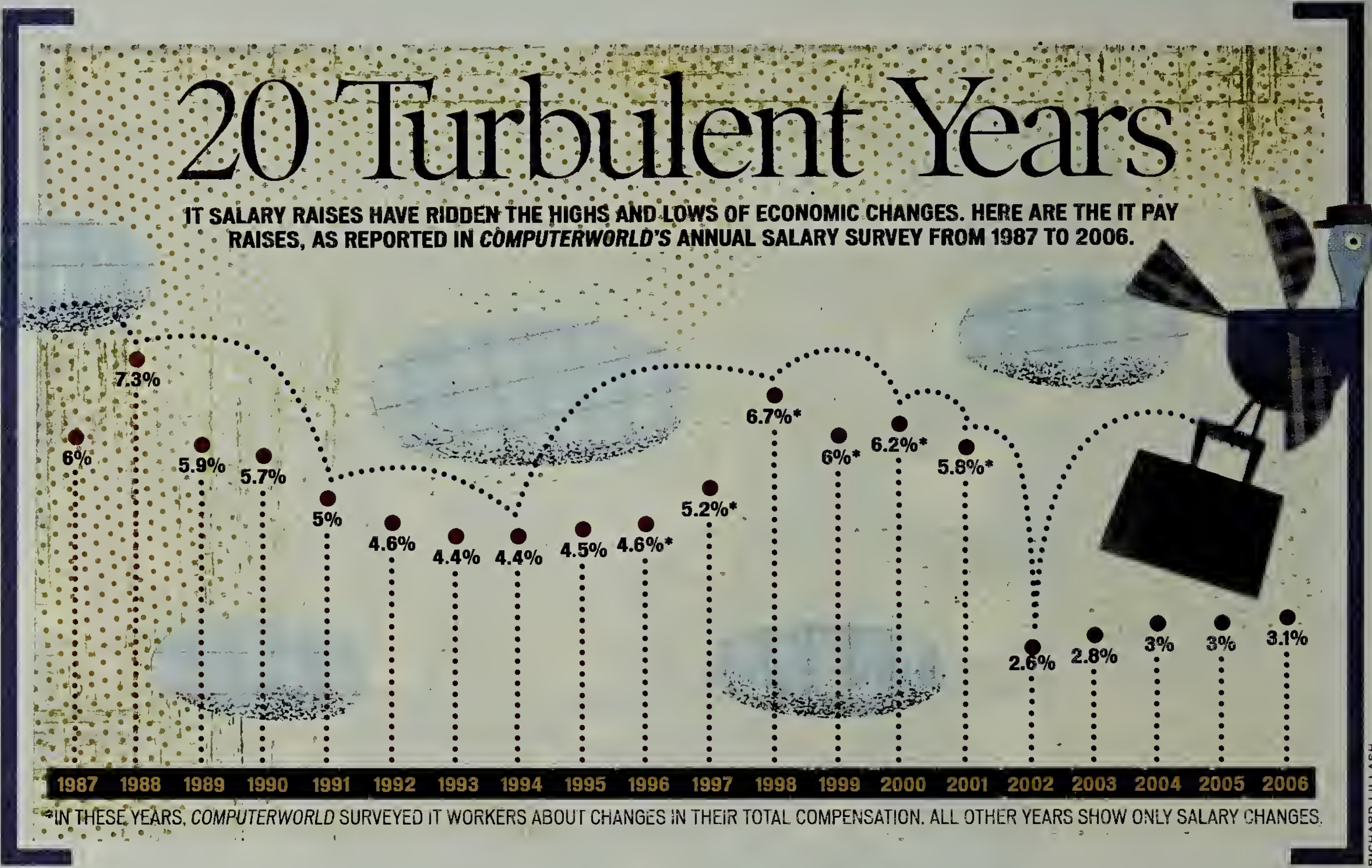
Job hopping, a career strategy that tumbled with the dot-com bust, is showing signs of a comeback. Matthew Castillo, a Web developer and administrator at the University of Houston, has already seen private-sector companies poach employees with Web skills from his staff. The 12-person Web technologies group has lost two people "just because they can make more elsewhere," Castillo says. "Especially in a state institution where salaries are fixed, it's hard for us to compete."

Foote calls it a battle for specialized skills. "There have always been talent wars in specific jobs. That has never changed. The difference today is it's now down to this niche level," Foote says. For these in-demand skills, companies are willing to pay "skills premiums" in the form of signing bonuses or retention bonuses.

C++ programmers are earning 7% to 11% over base pay, according to Foote Partners research. Certified WebSphere skills can nab 12% to 14% in bonus pay. CWNP wireless certifications from Planet3 Wireless Inc. can earn employees 8% to 12% more. Cisco certification as an advanced wireless LAN design specialist translates to a 7% to 11% increase in salary. Foote's study also found that skills premiums were similar for both certified and noncertified employees in these areas.

20 Turbulent Years

IT SALARY RAISES HAVE RIDDEN THE HIGHS AND LOWS OF ECONOMIC CHANGES. HERE ARE THE IT PAY RAISES, AS REPORTED IN *COMPUTERWORLD'S* ANNUAL SALARY SURVEY FROM 1987 TO 2006.



*IN THESE YEARS, *COMPUTERWORLD* SURVEYED IT WORKERS ABOUT CHANGES IN THEIR TOTAL COMPENSATION. ALL OTHER YEARS SHOW ONLY SALARY CHANGES.

RICHARD LILLASH

That creates problems for public-sector IT departments that can't pay extra for special skills. All IT workers at the California Department of Technology Services got a 3.5% pay raise this year, but Internet services manager David Rial has a hard time competing with the private sector for candidates who have any kind of specialized skills. "If I train my people, then I'm at risk of losing [them] to higher salaries in the private sector," he says.

But all this extra pay could wreak havoc on a company's compensation practices, Foote warns. "What they're doing now is the worst of all worlds. IT is saying, 'I'm going to give this person any title they want and ignore the HR department's compensation guidelines for that position.' That's messy," he says, because it creates overinflated pay scales down the road.

The best way to capture candidates with hot skills is to pay extra through a signing bonus or a retention bonus, Foote recommends, "and give them an informal job title that will differentiate [the employee] because we believe this skill is more valuable than others." ◗

Collett is a Computerworld *contributing writer. Contact her at stcollett@aol.com.*

CHARTS For compensation information for 30 IT job titles, turn to PAGE 52.

TOTAL COMPENSATION BY REGION

New England: Maine, Vermont, New Hampshire, Massachusetts, Connecticut, Rhode Island

Middle Atlantic: New York, New Jersey, Pennsylvania

South Atlantic: Delaware, District of Columbia, Maryland, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida, Puerto Rico, U.S. Virgin Islands

North Central: Wisconsin, Michigan, Illinois, Indiana, Ohio, North Dakota, South Dakota, Minnesota, Nebraska, Iowa, Kansas, Missouri

South Central: Kentucky, Tennessee, Mississippi, Alabama, Oklahoma, Arkansas, Louisiana, Texas

Mountain: Idaho, Montana, Wyoming, Nevada, Utah, Colorado, Arizona, New Mexico

Pacific: Alaska, Washington, Oregon, California, Hawaii, Guam

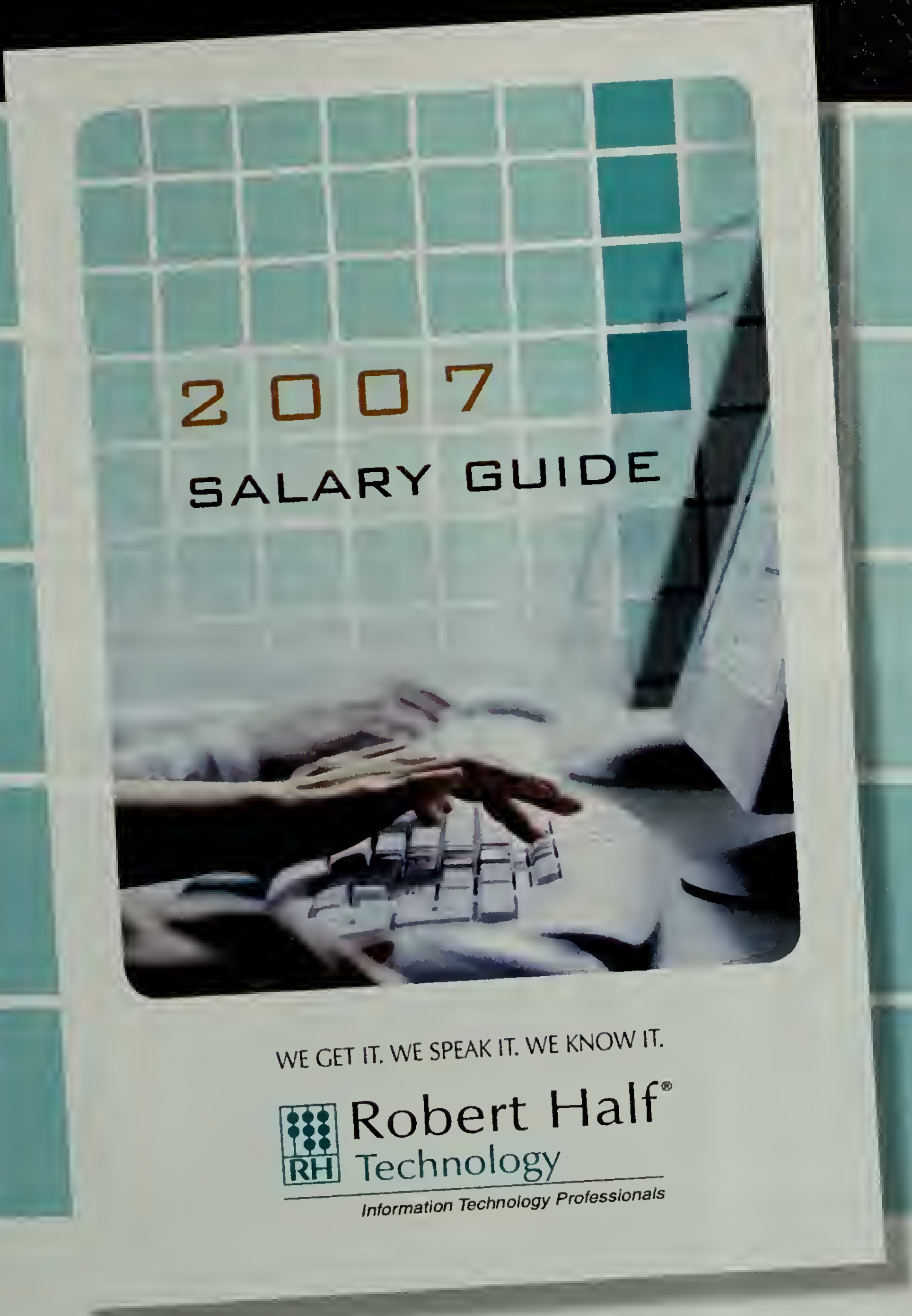
	NEW ENGLAND	MIDDLE ATLANTIC	SOUTH ATLANTIC	NORTH CENTRAL	SOUTH CENTRAL	MOUNTAIN	PACIFIC
CIO/vice president of IT	$178,242	$193,407	$177,308	$164,532	$164,816	$157,439	$185,524
Director of IT operations	$120,636	$126,058	$112,674	$110,795	$102,557	$92,709	$119,658
IT manager	$88,897	$92,670	$87,515	$83,672	$82,543	$80,482	$88,859
Project manager	$96,556	$102,141	$101,514	$93,156	$96,332	$96,648	$101,091
Technology/business systems analyst	$66,425	$78,816	$77,005	$71,216	$74,819	$65,378	$74,214
Programmer/analyst	$73,162	$70,748	$68,994	$65,011	$68,259	$68,823	$80,149
Help desk/tech support specialist	$54,444	$48,975	$49,697	$44,239	$45,847	$45,345	$57,139
Systems administrator	$65,312	$69,514	$66,720	$65,096	$62,097	$70,444	$73,990
Software engineer	$93,724	$86,839	$90,395	$80,127	$82,942	$88,526	$95,275
Database administrator	$84,600	$89,071	$86,576	$79,204	$82,375	$81,271	$89,457
Network administrator	$63,005	$57,966	$56,701	$51,884	$55,733	$49,605	$59,397
Senior systems analyst	$84,864	$82,917	$83,704	$82,008	$87,973	$80,297	$90,921
Systems architect	$104,345	$105,241	$97,804	$95,325	$106,024	$95,015	$110,377
Software developer	$88,015	$81,689	$83,849	$74,104	$83,758	$77,183	$89,956
Systems analyst	$75,362	$73,432	$68,641	$67,583	$69,614	$68,905	$69,190
Programming/application development manager	$119,899*	$108,124	$103,737	$102,188	$109,237	$103,277	$116,334

BLUE TEXT: The total base for this job title in this particular region was fewer than 30 responses but more than 15. These figures should be used for comparison only, because they don't constitute a statistically significant sampling.

* The total base for this job title in this particular region was fewer than 16 responses but more than nine. This figure should be used for comparison only.

THE LATEST SALARY DATA FOR YOUR AREA.

(FOR WHAT IT'S WORTH)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GENDER GAP:

Women's Paychecks Still Lag Men's

LAW FIRM IT director Patti Henderson says it's an open secret among a group of her professional peers in Boise, Idaho: Men working in the same IT positions freely admit that they make more money at the same jobs. For Henderson, her predecessor at law firm Givens Pursley LLP earned 12% more as director of IT.

"He came right out and said it. The excuse is that he knew the firm and the way things ran better [than I did], and I would have to build up to [his salary level]," she recalls. It took her five years in the IT director's position to make as much as he had made a half-decade earlier.

The gender gap in compensation remains striking, according to *Computerworld*'s 20th annual Salary Survey. A male director of IT makes $114,045 on average, while a female with that title makes $109,446, according to the survey. The gap between men and women widens to nearly $10,000 with the title of CIO or vice president of IT.

Across the board, total IT compensation averaged $91,464 for men and $80,781 for women. Those figures are similar to those from the U.S. Bureau of Labor Statistics, which reported that in 2005, women's usual median weekly earnings were 81% of men's. And although that pay disparity isn't for IT workers alone, the industry does have its own challenges.

"The numbers are symbolic of the obstacles and roadblocks that IT organizations have put up [for women] that are sending women away in droves," says Gartner Inc. analyst Diane Morello, who in October presented a maverick study called "Men and Women in IT: Breaking through Sexual Stereotypes."

Morello says IT departments should look beyond gender to the unique and vital characteristics that women bring to a high-performance team. She says research shows that women listen better than men, possess better language skills and score better on assessments of social skills and ability to understand other people's views, which aids in team-building and negotiations.

Still, those revelations haven't helped boost salaries for some women in IT. Jennifer, a wireless network engineer in Florida who asked to remain anonymous, is relieved that the disparity between her paycheck and those of her male counterparts is only $5,000. At her last job, the pay difference was nearly $20,000.

"Naturally, I thought about submitting my

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résumé with only a first initial. But when they get me on the phone, I can't exactly hide that I'm a female," she says.

Jan, a manager of Internet services at a nonprofit organization who also asked that her full name not be used, knows she's paid less than the men in her group. "There's probably a $15,000 difference" in pay, she says. "But at this point, I'd be crazy to leave. I'm too close to retirement."

Morello offers these words of advice: "If I were a woman trying to advance, I would look at companies that have more global business and put myself in positions for greater teaming and global projects. Also, I would be asking if I have the right kind of mentors – those who are tapped into business-based advancements and the people who have high credibility," many of whom happen to be men.

If these stereotypes aren't eliminated, Morello cautions that 40% of women will leave the IT workforce by 2012. And if that happens, she says, suddenly "your IT skills crisis is 50% worse than you think."

– STACY COLLETT

By the Numbers

SALARIES FOR WOMEN STILL TRAIL

MALE IT WORKERS	FEMALE IT WORKERS
$91,464	$80,781
AVERAGE 2006 TOTAL COMPENSATION	AVERAGE 2006 TOTAL COMPENSATION
UP 3.2% FROM LAST YEAR	UP 3.1% FROM LAST YEAR

BRIGHTER NEWS FOR BONUSES

Although they earned less bonus money overall, female IT workers reported a slightly higher percentage increase in bonuses this year.

MALE IT WORKERS	FEMALE IT WORKERS
$8,437	$5,936
AVERAGE 2006 BONUS	AVERAGE 2006 BONUS
UP 3.2% FROM LAST YEAR	UP 3.5% FROM LAST YEAR

BASE: 12,181 MEN; 2,477 WOMEN

SAME JOB, DIFFERENT PAY

A sampling of common titles and the earning power of men vs. women:

	MALE	MALE BASE	FEMALE	FEMALE BASE
CIO	$179,293	350	$162,626	49
PROJECT MANAGER	$99,846	576	$88,009	187
IT MANAGER	$86,282	1,260	$82,137	218
HELP DESK MANAGER	$77,931	164	$71,682	32
DIRECTOR OF IT	$114,045	976	$109,446	140
PROGRAMMER/ANALYST	$69,792	553	$63,558	144

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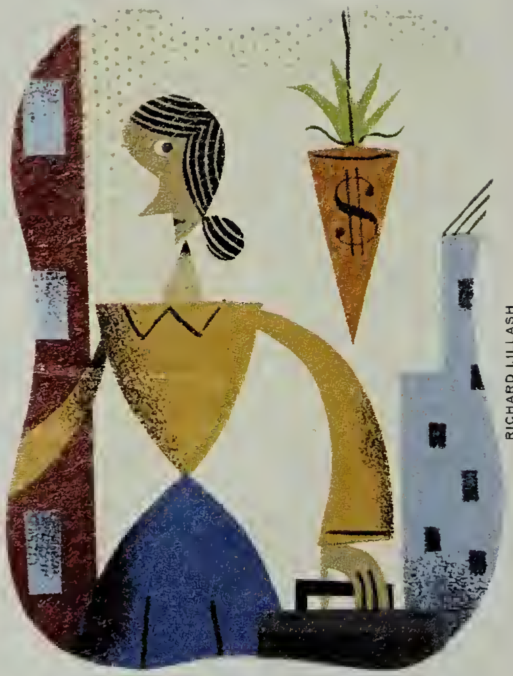
By the Numbers



RICHARD LILLASH

MONEY TRUMPS ALL

WHICH FACTORS WOULD MOST INFLUENCE YOU TO CHANGE YOUR JOB?

1	Salary increase	82%
2	Better work/life balance	46%
3	More vacation time	36%
4	Large signing bonus	36%
5	Access to new technology projects	35%
6	More responsibility	32%
7	More training	28%
8	New title	17%
9	Relocation	16%
10	Complete career change	16%
11	Paid moving expenses	15%

NOTE: MULTIPLE RESPONSES ALLOWED.

43% SAID THEY WOULDN'T CONSIDER SWITCHING TO A JOB WITH LOWER COMPENSATION.

OF THOSE WHO WOULD, HERE ARE THE TOP FIVE ENTICEMENTS:

1 Better work/life balance
2 More job satisfaction
3 Location
4 Flexibility
5 Stock options

PAUL GLEN

Commitment Phobia

Courtship and marriage the second time around are different from first relationships. The period of adjustment after divorce demands introspection, and survivors typically emerge with new ideas about themselves, others and the nature of relationships.

The specific challenge for those contemplating second marriages is making the decision to commit again. Oddly enough, the numbers from *Computerworld*'s 2006 Salary Survey lead me to think that IT workers and corporate America are in a similar situation. They're toying with the idea of committing again after being burned once. They seem to recognize that they need one another, but they aren't certain that they're ready to trust again. IT workers fear they'll be tossed out with the next economic dip, and their employers fear that an expensive talent war may be on the horizon.

PAUL GLEN is the director of the Developing Technical Leaders Program (*www.developingtechnicalleaders.com*) and author of the award-winning book *Leading Geeks: How to Manage and Lead People Who Deliver Technology* (Jossey-Bass, 2002). Contact him at **info@paulglen.com**.

Everyone involved seems to be in the throes of major commitment phobia. I'm not going to suggest that there aren't good reasons on both sides, but it seems a rather unfortunate state of existence, especially during a period characterized by such a good business climate. Corporate profits are up. The stock market has risen to prebust levels, and despite spiking energy prices, inflation seems generally under control. The U.S. Federal Reserve has even stopped raising interest rates (for now). This is the economic equivalent of springtime in Paris. If workers and managers can't learn to trust again here and now, will they ever?

A few key findings from this year's survey fill out the picture that I see every day in my travels as a consultant. First, consider the near-flat salary numbers. Despite megaprofits in some industries, the purse strings are still being held tightly.

Second, and more important, the increasing use of one-time compensation tools, such as signing bonuses and annual bonuses, rather than more permanent commitments to salary are signs of failure to commit. Finally, the number of staffers saying that they are passively, if not actively, looking for new jobs, signals that this isn't just a one-sided fear.

So in this environment, companies commit only in special cases, accepting the necessity of capturing rare talent. And even then, they don't want to overpromise. No one wants the long-term pension liabilities of GM or United Air Lines, living with the consequences of promises that might be impossible to keep.

And staffers no longer believe in the grand missions of their corporations. They dismiss with an eye roll the ubiquitous statement that "people are our most important asset." No one treats their most valuable assets like they've been treated over the past five years.

Managers are expected to have one eye on the income statement and the other on the stock price. Employees have one eye on their work and the other on the help-wanted ads. There are no eyes left for each other.

Perhaps I'm just pining for something that never was or never should have been. But it seemed like work was more exciting and fun when employers and employees believed in something more than unvarnished self-interest.

Will we dare to trust again? Stay tuned. Despite fears of being more vulnerable, both sides know that amazing creativity and productivity happen only when there's at least a hint of that old-fashioned loyalty — and trust. ▸

> COMPANIES COMMIT ONLY IN SPECIAL CASES, ACCEPTING THE NECESSITY OF CAPTURING RARE TALENT. AND EVEN THEN, THEY DON'T WANT TO OVERPROMISE. NO ONE WANTS THE LONG-TERM PENSION LIABILITIES OF GM OR UNITED AIR LINES.

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COMPUTERWORLD SALARY SURVEY 2006

SENIOR MANAGEMENT POSITIONS

	CIO/vice president of IT	Chief technology officer	Director of systems development	Director of IT operations	Internet technology strategist
%	4.2%	3.5%	4%	3.4%	2.9%
Average salary	$143,921	$134,871	$134,351	$101,136	$106,867
Bonus	$31,208	$26,422	$25,957	$12,165	$12,509
Total	$175,129	$161,293	$160,308	$113,301	$119,376
2005 total	$168,110	$155,875	$154,191	$109,627	$116,005
AVERAGE TOTAL COMPENSATION BY INDUSTRY					
	Services/consulting (computer) $188,678 Manufacturing (noncomputer) $191,026 Education $125,345 Finance/accounting $190,498 Health care $182,078 Banking $151,732 Legal/insurance/real estate $190,719 Government $125,806	Services/consulting (computer) $154,345 Government $117,447 Education $104,808* Entertainment/advertising $192,873*	Services/consulting (computer) $157,810 Finance/accounting $166,550 Health care $141,329 Manufacturing (noncomputer) $167,876 Banking $187,206 Manufacturing (computer) $164,121* Services/consulting (noncomputer) $160,300*	Education $83,085 Manufacturing (noncomputer) $122,628 Health care $107,770 Government $88,659 Services/consulting (computer) $134,096 Legal/insurance/real estate $128,965 Finance/accounting $135,814 Services/consulting (noncomputer) $112,748	Services/consulting (computer) $121,446 Telecommunications $118,745* Banking $104,625*
AVERAGE TOTAL COMPENSATION BY COMPANY REVENUE					
Less than $100M	$141,372	$123,000	$135,186	$90,282	$83,083
$100M to $999.9M	$184,931	$174,578	$148,210	$119,617	$111,886
$1B to $10B	$217,989	$230,195	$176,163	$139,429	$119,944
More than $10B	$212,247	$224,771*	$189,175	$176,482	$140,633

MIDDLE MANAGEMENT POSITIONS

	Computer operations manager	Help desk/tech support manager	Information security manager	IT manager
%	3.0%	2.7%	4.4%	2.7%
Average salary	$76,137	$70,203	$96,938	$79,329
Bonus	$5,671	$7,206	$12,560	$6,378
Total	$81,808	$77,409	$109,498	$85,707
2005 total	$79,462	$75,382	$104,918	$83,433
AVERAGE TOTAL COMPENSATION BY INDUSTRY				
	Education $62,702 Government $78,108* Manufacturing (noncomputer) $94,685 Health care $75,535*	Services/consulting (computer) $83,794 Education $51,491 Legal/insurance/real estate $97,267 Manufacturing (noncomputer) $85,031 Retail trade $71,827* Government $53,484* Health care $69,030* Finance/accounting $89,414*	Banking $114,922 Government $93,123 Manufacturing (noncomputer) $113,497 Services/consulting (computer) $98,773* Finance/accounting $129,837* Defense/aerospace $102,500* Health care $105,060*	Manufacturing (noncomputer) $84,570 Education $64,366 Government $80,937 Health care $81,208 Services/consulting (computer) $101,022 Banking $94,048 Legal/insurance/real estate $98,228 Finance/accounting $91,859
AVERAGE TOTAL COMPENSATION BY COMPANY REVENUE				
Less than $100M	$65,256	$59,158	$88,640	$69,134
$100M to $999.9M	$87,807	$76,996	$97,017	$89,651
$1B to $10B	$92,396	$90,161	$107,692	$105,542
More than $10B	$101,011	$104,867	$135,628	$116,551

% Average percentage increase, 2005-2006

Gray text: The total base for this job title in this particular industry or company size was fewer than 30 responses but more than 15. These figures should be used for comparison only, because they don't constitute a statistically significant sampling.

* The total base for this job title in this particular industry or company size was fewer than 16 responses but more than nine. These figures should be used for comparison only.

By the Numbers

HOT INDUSTRIES

LARGEST INCREASES IN TOTAL COMPENSATION, BY INDUSTRY:

Mining, agriculture, construction and engineering	4.9%
Defense/aerospace	4%
Food and beverage	3.9%
Business services/consulting (noncomputer)	3.8%
Entertainment, marketing and advertising	3.7%

A SAMPLING OF OTHER JOB TITLES

	Chief security officer	Director of e-commerce	Communications manager	Database manager	Data warehousing manager	E-commerce manager	Internet/intranet manager	Business intelligence analyst
%	5.7%	5.5%	2%	3.4%	4.2%	1.2%	4.4%	3.6%
Average salary	$130,677	$124,354	$80,474	$91,358	$103,193	$93,346	$81,806	$72,173
Bonus	$25,786	$26,583	$9,643	$5,803	$13,259	$15,684	$5,868	$3,872
Total	$156,463	$150,937	$90,117	$97,161	$116,452	$109,030	$87,674	$76,045
Base	35	69	110	87	37	33	65	145
2005 total	$148,058	$143,082	$88,351	$93,945	$111,795	$107,691	$83,977	$73,421

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Irvine Marriott
8:00am to Noon

Ahead of the Curve: Optimizing Application and Business Performance

8:00am to 8:30am	**Registration and Networking Breakfast**
8:30am to 8:40am	**Introduction and Overview** Ron Milton, Executive Vice President, Computerworld
8:40am to 9:20am	**Market Overview and Trends** Michael Hugos, Former CIO and Author of *Essentials of Supply Chain Management* and *Building the Real Time Enterprise: An Executive Briefing*
9:20am to 10:00am	**Application Performance at Broadcom Corporation: An End-User Case Study** Ken Venner, Senior Vice President and Chief Information Officer, Broadcom Corporation
10:00am to 10:15am	**Refreshment and Networking Break**
10:15am to 10:50am	**Application Performance Assurance Case Studies: It Pays to be Predictable** Andrew Hittle, Vice President, Quality Assurance Solutions, Compuware
10:50am to 11:25am	**Application Performance: An End-User Case Study** Kenneth Speller, Director of Quality Assurance, Chicago Board of Trade
11:25am to Noon	**Panel Discussion** Moderator: Ron Milton, Executive Vice President, Computerworld Panelists: Michael Hugos, Former CIO and Author of *Essentials of Supply Chain Management* and *Building the Real Time Enterprise: An Executive Briefing*; Andrew Hittle, Vice President, Quality Assurance Solutions, Compuware; Ken Venner, Senior Vice President and Chief Information Officer, Broadcom Corporation; Kenneth Speller, Director of Quality Assurance, Chicago Board of Trade

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MIDDLE MANAGEMENT POSITIONS

Network manager	Product manager	Application development manager	Project manager
1.4%	2.5%	3.3%	2.8%
Average salary $71,440	Average salary $96,030	Average salary $96,550	Average salary $89,766
Bonus $6,516	Bonus $10,968	Bonus $9,366	Bonus $7,222
Total $77,956	Total $106,998	Total $105,916	Total $96,988
2005 total $76,914	2005 total $104,429	2005 total $102,539	2005 total $94,370

AVERAGE TOTAL COMPENSATION BY INDUSTRY

Network manager	Product manager	Application development manager	Project manager
Education $61,315	Services/consulting (computer) $111,492	Services/consulting (computer) $108,370	Services/consulting (computer) $97,536
Manufacturing (noncomputer) $85,306	Manufacturing (computer) $113,375	Manufacturing (noncomputer) $107,655	Government $87,005
Government $70,034	Telecommunications $105,554*	Government $88,092	Health care $90,700
Health care $67,894		Finance/accounting $118,668	Finance/accounting $108,980
Legal/insurance/ real estate $91,574*		Manufacturing (computer) $127,550	Manufacturing (noncomputer) $100,752
Telecommunications 107,824*		Health care $92,036	Legal/insurance/ real estate $93,778
Services/consulting (computer) $84,492*		Legal/insurance/ real estate $101,017	Banking $95,348
		Banking $134,475	Telecommunications $98,361

AVERAGE TOTAL COMPENSATION BY COMPANY REVENUE

Network manager	Product manager	Application development manager	Project manager
Less than $100M $68,865	Less than $100M $92,088	Less than $100M $89,745	Less than $100M $84,274
$100M to $999.9M $78,050	$100M to $999.9M $102,439	$100M to $999.9M $99,724	$100M to $999.9M $91,687
$1B to $10B $113,957	$1B to $10B $107,753	$1B to $10B $113,020	$1B to $10B $101,431
More than $10B $92,632	More than $10B $119,307	More than $10B $131,352	More than $10B $105,607

STAFF AND ENTRY-LEVEL POSITIONS

Database administrator	Help desk/ tech support specialist	Information security specialist	Technology/ business analyst	Network and wireless network engineer	Network administrator	Programmer/ analyst
2.3%	2.8%	3.4%	3.1%	2.7%	3.1%	2.6%
Average salary $79,098	Average salary $46,016	Average salary $76,087	Average salary $68,579	Average salary $68,986	Average salary $52,699	Average salary $65,030
Bonus $4,646	Bonus $2,466	Bonus $5,881	Bonus $3,783	Bonus $5,332	Bonus $2,371	Bonus $3,525
Total $83,744	Total $48,482	Total $81,968	Total $72,362	Total $74,318	Total $55,070	Total $68,555
2005 total $81,898	2005 total $47,181	2005 total $79,287	2005 total $70,219	2005 total $72,374	2005 total $53,419	2005 total $66,802

AVERAGE TOTAL COMPENSATION BY INDUSTRY

Database administrator	Help desk/ tech support specialist	Information security specialist	Technology/ business analyst	Network and wireless network engineer	Network administrator	Programmer/ analyst
Services/consulting (computer) $91,076	Education $40,149	Services/consulting (computer) $85,083	Services/consulting (computer) $75,897	IT/computer services/ consulting $73,458	Manufacturing (noncomputer) $54,899	Services/consulting (computer) $64,269
Government $75,238	Services/consulting (computer) $53,333	Banking $70,364	Manufacturing (noncomputer) $68,168	Telecommunications $79,151	Health care $50,947	Legal/insurance/ real estate $68,362
Health care $79,755	Manufacturing (noncomputer) $45,539	Government $83,781	Government $67,837	Health/medical services $67,696	Government $58,755	Manufacturing (noncomputer) $67,403
Manufacturing (noncomputer) $82,550	Government $47,789	Legal/insurance/ real estate $82,648	Health care $61,390	Manufacturing (noncomputer) $77,493	Education $44,995	Government $62,906
Legal/insurance/ real estate $87,941	Health care $46,189	Finance/accounting $84,053	Legal/insurance/ real estate $70,856	Government $74,353	Services/consulting (computer) $54,349	Education $57,228
Education $67,554	Legal/insurance/ real estate $47,403	Defense/aerospace $79,265	Education $56,659	Education $57,597	Legal/insurance/ real estate $59,569	Health care $67,171
Finance/accounting $80,777	Finance/accounting $47,596	Health care $79,750*	Banking $71,581	Finance/accounting $87,636*	Banking $56,156	Retail trade $69,412
Retail trade $81,653	Banking $52,394	Telecommunications $95,568*	Finance/accounting $83,393	Banking $66,740*	Services/consulting (noncomputer) $50,964	Finance/accounting $78,651

AVERAGE TOTAL COMPENSATION BY COMPANY REVENUE

Database administrator	Help desk/ tech support specialist	Information security specialist	Technology/ business analyst	Network and wireless network engineer	Network administrator	Programmer/ analyst
Less than $100M $72,257	Less than $100M $43,945	Less than $100M $79,041	Less than $100M $62,252	Less than $100M $69,558	Less than $100M $51,522	Less than $100M $62,585
$100M to $999.9M $84,137	$100M to $999.9M $49,460	$100M to $999.9M $78,732	$100M to $999.9M $69,422	$100M to $999.9M $70,438	$100M to $999.9M $56,790	$100M to $999.9M $67,994
$1B to $10B $89,383	$1B to $10B $55,509	$1B to $10B $86,023	$1B to $10B $78,425	$1B to $10B $80,451	$1B to $10B $67,394	$1B to $10B $72,268
More than $10B $96,812	More than $10B $56,590	More than $10B $89,373	More than $10B $83,163	More than $10B $82,565	More than $10B $70,465	More than $10B $77,413

% Average percentage increase, 2005-2006

Gray text: The total base for this job title in this particular industry or company size was fewer than 30 responses but more than 15. These figures should be used for comparison only, because they don't constitute a statistically significant sampling.

* The total base for this job title in this particular industry or company size was fewer than 16 responses but more than nine. These figures should be used for comparison only.

By the Numbers

COLD INDUSTRIES

SMALLEST INCREASES IN TOTAL COMPENSATION, BY INDUSTRY:

Computer dealer/reseller	-1.6%
Automotive	1.6%
Government	2.2%
Wholesale trade	2.5%
Education	2.7%
Nonprofit	2.7%

A SAMPLING OF OTHER JOB TITLES

Database developer/ modeler	E-commerce specialist	Messaging specialist	Network architect	Storage administrator/ architect/ engineer	Quality assurance specialist	Technical trainer	Webmaster
2.6%	1.1%	2.2%	5.3%	4%	3.2%	1.9%	3.4%
Average salary $68,421	Average salary $68,798	Average salary $73,139	Average salary $91,787	Average salary $83,687	Average salary $65,776	Average salary $62,810	Average salary $54,159
Bonus $4,367	Bonus $3,561	Bonus $4,578	Bonus $5,965	Bonus $9,771	Bonus $4,124	Bonus $3,816	Bonus $1,066
Total $72,788	Total $72,359	Total $77,717	Total $97,752	Total $93,458	Total $69,900	Total $66,626	Total $55,225
Base: 53	Base: 38	Base: 32	Base: 54	Base: 106	Base: 117	Base: 91	Base: 67
2005 total $70,951	2005 total $71,585	2005 total $76,011	2005 total $92,800	2005 total $89,886	2005 total $67,707	2005 total $65,404	2005 total $53,429

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COMPUTERWORLD SALARY SURVEY 2006

STAFF AND ENTRY-LEVEL POSITIONS

	Project leader	Software developer	Software engineer	Systems administrator	Systems architect	Systems programmer	Systems analyst	Senior systems analyst	Technician	Web developer
%	2.4%	3.1%	2.6%	3.1%	2.3%	2.1%	3.8%	2.6%	1.3%	4.8%
Average salary	$78,100	$73,412	$80,439	$63,303	$90,969	$80,690	$65,396	$79,187	$45,826	$59,531
Bonus	$4,950	$4,807	$4,306	$3,573	$9,295	$5,649	$3,090	$4,204	$2,015	$2,821
Total	$83,050	$78,219	$84,745	$66,876	$100,264	$86,339	$68,486	$83,391	$47,841	$62,352
2005 total	$81,081	$75,883	$82,575	$64,881	$97,985	$84,571	$65,979	$81,270	$47,217	$59,508
AVERAGE TOTAL COMPENSATION BY INDUSTRY										
	Services/consulting (computer) $79,495 Manufacturing (noncomputer) $88,380 Government $85,744 Finance/accounting $80,463 Defense/aerospace $98,907* Health care $68,563* Education $65,347* Transportation/logistics $78,503*	Services/consulting (computer) $79,043 Legal/insurance/real estate $71,304 Banking $78,341 Health care $72,974 Manufacturing (computer) $94,477 Telecommunications $66,079 Government $73,121 Finance/accounting $86,950	Services/consulting (computer) $83,486 Manufacturing (computer) $98,165 Defense/aerospace $87,779 Manufacturing (noncomputer) $77,817 Telecommunications $81,155 Finance/accounting $95,475 Legal/insurance/real estate $80,073	Services/consulting (computer) $68,869 Manufacturing (noncomputer) $61,807 Education $53,913 Government $61,069 Health care $68,411 Legal/insurance/real estate $66,606 Entertainment/advertising $70,622 Telecommunications $74,825	Services/consulting (computer) $98,730 Defense/aerospace $101,250 Finance/accounting $116,508 Health care $84,332 Banking $119,167 Legal/insurance/real estate $95,118 Manufacturing (computer) $126,743 Telecommunications $99,849	Services/consulting (computer) $80,998 Education $65,553 Legal/insurance/real estate $88,324 Government $73,817* Finance/accounting $95,000* Retail trade $103,068*	Services/consulting (computer) $70,874 Health care $61,987 Manufacturing (noncomputer) $67,987 Finance/accounting $73,115 Legal/insurance/real estate $76,333 Government $67,179 Energy/utilities $70,818 Education $56,756	Manufacturing (noncomputer) $79,341 Services/consulting (computer) $90,307 Health care $76,394 Government $79,114 Legal/insurance/real estate $82,449 Finance/accounting $93,342 Education $66,487 Banking $90,316	Education $40,655 Services/consulting (computer) $48,077 Manufacturing (noncomputer) $51,014 Health care $44,262 Government $51,413 Telecommunications $59,209* Transportation/logistics $45,527*	Services/consulting (computer) $64,781 Education $44,107 Finance/accounting $64,542* Government $71,715*
AVERAGE TOTAL COMPENSATION BY COMPANY REVENUE										
Less than $100M	$73,026	$69,797	$76,632	$58,025	$85,170	$71,315	$61,154	$75,529	$41,159	$52,146
$100M to $999.9M	$74,002	$80,369	$84,324	$67,140	$96,225	$86,363	$65,876	$81,928	$48,139	$63,379
$1B to $10B	$85,011	$83,132	$87,049	$75,344	$102,085	$92,084	$75,096	$85,121	$53,379	$78,352
More than $10B	$100,185	$89,092	$91,528	$79,566	$109,942	$92,797	$77,536	$89,319	$62,837	$73,953

% Average percentage increase, 2005-2006

Gray text: The total base for this job title in this particular industry or company size was fewer than 30 responses but more than 15. These figures should be used for comparison only, because they don't constitute a statistically significant sampling.

* The total base for this job title in this particular industry or company size was fewer than 16 responses but more than nine. These figures should be used for comparison only.

Methodology

Computerworld's 20th Annual Salary Survey was administered via the Internet. Responses from both *Computerworld* print subscribers and visitors to *Computerworld.com* were included in the survey results.

The collection of survey data began May 5 and concluded July 14, 2006. A total of 16,866 people responded to the survey. Of those respondents, 14,740 were employed full or part time and were eligible to complete the entire survey. At the 95% confidence level, the margin of error for this sample size is less than +/-1 percentage point.

Respondents were asked to report the percentage change in their compensation from 2005 to 2006. Compensation figures for 2005 were calculated based on the percentage change reported by the respondents.

ONLINE

For a detailed look at how we conducted this survey, visit our Web site: www.computerworld.com/06/salaries

WHO THEY ARE

EIGHTY-THREE percent of our respondents were men, 92% were employed full time, and 47% said a bachelor's degree was their highest level of education. Respondents had an average of 15 years in IT, and their average age was 43. Forty-eight percent indicated that they had some level of computer certification.

The companies they work for employ an average of 9,607 total employees and an average of 997 IT staffers. The average 2006 revenue at their employers is $2.9 billion. Thirty-eight percent work for public companies, while 35% work for private companies; 10% work in education, 10% in government and 7% for nonprofits.

Eighty-four percent reported that they held the same job last year. Forty-five percent of our respondents indicated that they were in management, and 55% said they held staff or technical positions.

The most well-represented industry in the sample was IT services, with 14% saying they worked in that field. Nineteen percent reported living in the South Atlantic region of the country, and another 29% reported living in the North Central region, making those geographic areas the best represented. Four percent said they were employed as contractors or consultants.

Pay rates for contractors and consultants can be found at *www.computerworld.com/06/salaries.*

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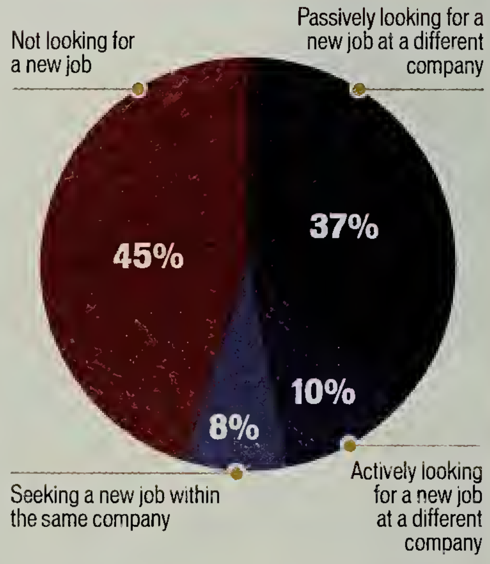
By the Numbers

RICHARD LILLASH

ON THE LOOKOUT

WHICH ONE OF THE FOLLOWING BEST DESCRIBES YOUR JOB SEARCH STATUS?



TOP FIVE REASONS THEY'RE LOOKING FOR A JOB:

1	Looking for higher compensation	63%
2	Career opportunities	47%
3	Seeking more interesting/ challenging work	43%
4	Looking for more personal fulfillment	41%
5	Seeking more responsibility	29%

TOP FIVE REASONS THEY AREN'T LOOKING FOR A JOB:

1	Satisfied with current job responsibilities	70%
2	Satisfied with current compensation	50%
3	Satisfied with company culture	48%
4	Job market is poor/ few opportunities	21%
5	Other	17%

NOTE: MULTIPLE RESPONSES ALLOWED.

JOHANNA ROTHMAN

A Slow Thaw

THIS YEAR, it's clear that the economy has changed. *Computerworld*'s 2006 Salary Survey shows that fewer people are seeing their pay decline. Some are getting raises. The overall change in base salary is flat. The frozen job market is starting to melt, giving less advantage to employers and more to employees.

So what does that mean for both sides? Look at the numbers: 47% of all the IT workers who responded to the survey said that they're either actively or passively looking for another job. That could create a huge movement in jobs in the industry in the coming year or so. And 29% of those job-seeking respondents are looking for more responsibility. That's a big number. Remember, the cost of replacing an employee can be as much as the employee's salary for one year. At a minimum, it's a few months of his salary.

Managers, here's some free advice: Ask your staff in one-on-one meetings if they're happy with their responsibilities. If not, determine if there's a way to make the work more palatable, or even change people's responsibilities.

Employees, here's your advice: Talk to your manager. He may not realize you're unhappy, especially if he's working in crisis mode and hasn't kept up with your one-on-one meetings.

Another factor in retention is salary and work environment satisfaction: 22% of all respondents said they aren't satisfied with their compensation, and 43% of job seekers are looking for more interesting and challenging work. I suspect these two are related for many people. An interesting work environment is a combination of what people can discuss, how people are treated and what's rewarded. This means it's even more important for managers to consider how to establish a positive work culture and competitive reward system.

Some of the most important things are free — meaning they don't cost money, not that they don't require your time. Spending time with employees in one-on-ones and building a trusting relationship costs nothing but time. Compared with the cost of replacing an employee, it's cheap.

JOHANNA ROTHMAN, president of Rothman Consulting Group Inc., consults, speaks and writes on managing high-technology product development. She is co-author of the newly released *Behind Closed Doors: Secrets of Great Management*, and she blogs regularly for *Computerworld.com*. She can be reached at **jr@jrothman.com**.

That said, money still talks. If we look more closely at the data, we see that a staggering 63% of the people looking for new jobs are looking for more money. It's not 1999 yet, but remember, baby boomers are starting to retire, and there are fewer trained people ready to take their place.

Managers, if you think you need more people, start being concerned about where the new folks are going to come from. And start reviewing your salary data. Compare what you pay to what others pay in your area for similar jobs. You may be unpleasantly surprised.

If you are looking to hire people, remember you're offering a career opportunity, not a job. That's good, because that's what people want. They want more interesting and challenging work.

You may have to reorganize how your group does work. That's OK, because your bosses are probably on your case to produce more with the same number of people.

Consider moving to cross-functional, feature-oriented teams for at least some of your product development. A cross-functional team focused on one feature or a related group of features offers people a chance to expand their skills and learn new ones. And all team members become more familiar with that part of the product.

And employees, if you've read the survey and found that your salary isn't stacking up to those of your peers, take this advice: Research what your position pays in a variety of industries and geographical locations and review your accomplishments over the past year so you can start making your case.

It's not a job hunter's market — at least not yet. But if you look at the trends from 2005 to 2006, it's clear that employees feel better about seeking new jobs and aren't afraid to start looking anymore.

Managers, remember that retention is your single best recruitment strategy. Build relationships with your team, and consider how you can create more challenges at work.

Employees, remember that your manager is only human. Have a talk with your manager and explain what you want out of work. You might be surprised to discover that you can find it at your current employer.

And if you've decided to look for a new job — have a blast! There are opportunities out there if you're willing to learn new things. ▸

ONLINE EXCLUSIVE

Need more advice about asking for a raise? Submit your question on our Web site, and Johanna Rothman will answer select reader inquiries online all this week: www.computerworld.com/06/salaries

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Data Security

mation security at JM Family Enterprises Inc., an auto distribution and financing company in Deerfield Beach, Fla., with annual revenue of $9.4 billion.

Nonpublic information of all sorts needs to be protected, whether it is being stored on a system or actively used, said Ceraolo. That requires an increased focus within IT on security measures such as data classification and encryption, end-user access and authentication, and usage monitoring and auditing, he added.

'Blocking and Tackling'

At Gaylord Entertainment Co., most of the "blocking and tackling" that was needed to address network threats has already been accomplished, said Mark Burnett, director of IT security and compliance at the Nashville-based hospitality company. Now the goal is to put multilayered defenses around data as well, he said.

"We're layering technology controls to make sure we can identify where the information is passing across our network," Burnett said.

The driving force behind the data protection effort and the company's overall IT security program is "reputation management," he noted. "We've worked hard to build the Gaylord brand," Burnett said. "Any one incident could ruin all that work."

Also contributing to the stronger focus on data security is the need for Gaylord to comply with regulations such as the Sarbanes-Oxley Act and the Payment Card Industry security standard, which was established by the major credit card companies. "We absolutely recognize the need to protect sensitive information and are working hard to fulfill that obligation," Burnett said.

Ann Garrett, chief information security officer at the North Carolina Office of Information Technology Services (OITS) in Raleigh, said a new state law that governs the use of personally identifiable information is elevating the need for security controls at the data level. The law went into effect for the private sector on Oct. 1 and will start applying to state agencies next October.

North Carolina's government has "a strong network firewall, intrusion-detection system and intrusion-prevention system," said Garrett. What's lacking, she added, are controls for mitigating user errors at the endpoints of networks.

As a result, there's an increased focus within the OITS on encrypting data and providing the ability to log and audit user transactions. "We have to add accountability and auditability," Garrett said.

Within the federal government, high-profile breaches such as the one at the Department of Veterans Affairs earlier this year have resulted in an intense scrutiny of data security practices, according to Patrick Howard, CISO at the Department of Housing and Urban Development.

Howard said during a panel discussion at last week's conference that Congress, the White House Office of Management and Budget and HUD's inspector general "are looking over our shoulders closely" on data security.

In July, HUD disclosed that it had lost a backup disk containing sensitive information on 757 current and former employees. "We pulled back the sheet and discovered there is a lot to do" to protect personal data, Howard said.

By year's end, the agency expects to have an implementation plan in place for addressing the security issues it has identified thus far. Howard said the planned measures include data encryption, two-factor authentication of users and closer monitoring of user activity. He didn't disclose a timetable for completing the implementation work.

"There are so many vulnerabilities out there that there aren't enough hackers to take advantage of all of them," Howard said. What's really important, he advised other attendees, is taking a holistic, risk-based approach to securing data and understanding that it involves "people, process and technology." ◗

NEW SECURITY AGENDA

> **"We pulled back the sheet and discovered there is a lot to do [to protect personal data].**
>
> **PATRICK HOWARD,** CISO, U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

> **"The data now matters above everything else.**
>
> **JOHN CERAOLO,** DIRECTOR OF INFORMATION SECURITY, JM FAMILY ENTERPRISES INC.

SQL Server Users Slow on 'Serious Uptake' of New DB

BY ERIC LAI

Kevin Kline *is president of the Professional Association for SQL Server (PASS), an independent group for users of Microsoft Corp.'s flagship database. PASS is holding its annual conference in Seattle this week, and about 2,500 people are expected to attend, according to Kline, who works as technical strategy manager for SQL Server products at Quest Software Inc. Kline spoke with* Computerworld *last week about issues such as how PASS members feel about SQL Server 2005 a year after its launch.*

Microsoft won't support versions of SQL Server prior to the 2005 release on Windows Vista. In fact, Vista users will need to upgrade to Service Pack 2 of SQL Server 2005. Are users feeling pressured to upgrade? I think it is an issue. I'm hearing some grumbling about it, and it might actually slow down the adoption of Vista itself. People are telling me they don't want to give up their existing database just for a new operating system. There's not enough in Vista to force them to do that.

From your conversations with PASS members, what percentage have upgraded to SQL Server 2005? There are many shops with one or two instances of SQL Server 2005 running. I don't consider that a strong commitment. Most SQL Server DBAs support a dozen instances of the database or more. So in measuring serious uptake — that is, DBAs who have half or more of their boxes [running] SQL Server 2005 — I'd say it's about 20% or so.

What features are users still looking for Microsoft to add? There is a widespread desire for better tools. SQL Server 2005 [includes] a whole new interface called SQL Server Management Studio. In some ways, it's a step back. There are a lot of new and neat features, but you hear a lot of complaints about what it doesn't do. For example, SQL Server made its name going back to Version 7.0 with its GUI and not forcing DBAs to learn all of this SQL code. With 2005, new features like database mirroring or partitioning have to be addressed in code.

Visual Studio has long had a feature called Intellisense, which is like an auto-complete feature in Word. SQL Server users have been begging for something similar for eons. It was in the betas for Management Studio at one point, but Microsoft pulled it out.

Compliance is another huge issue. In the old days, people needed to know who had changed data. Now, many shops need to know who has looked at data. That capability is hard to build in without building in a lot of overhead. But people are looking to Microsoft for an answer.

There is also pain around change management. That isn't a big deal if you're an Oracle DBA with just one or two servers, but if you're a SQL Server DBA with 24 servers to patch, it can be a real pain in the rear. Right now, the answers mostly come from other Microsoft products, like Systems Management Server. But that doesn't soothe a lot of DBAs, because they don't necessarily want to hand this [issue] off to another team.

Microsoft is expected to release SP2 of SQL Server 2005 early next year. It ties in with collaboration features, especially in Office. What impact will there be on SQL Server DBAs? After a certain point, adding another spell checker or template doesn't change Office much. But SQL Server's tie-ins with SharePoint and Excel will help people make more sense of data and turn it into actionable information. Most DBAs are still assessing [SP2]. They don't know what will work and how much is going to be involved for them. ◗

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FRANK HAYES ■ FRANKLY SPEAKING

IT's Bitter Pill

SAY you walk into work on Monday morning to find a lengthy e-mail message. It's from a project supervisor. It's addressed to everyone in the company. It says a hugely expensive, mission-critical application is a failure that won't scale, is regularly down and is likely to cost lots of money and maybe even lives. And the message appears to back up those claims with financial, technical and historical detail (see story, page 6).

If you're a CIO, it's the sort of thing that probably gives you a sick feeling in the pit of your stomach.

If you work at Kaiser Permanente, it's what happened last week.

And if you're the CIO at the not-for-profit health care giant, as Clifford Dodd was last Monday, it's the prelude to your departure — Dodd resigned the next day.

Wait, it gets uglier. The Kaiser e-mail message didn't just claim that Kaiser's electronic medical records system, HealthConnect, was a $3 billion failure. It also claimed that Dodd was a director for the company that had collected a $1 million consulting fee for recommending the product HealthConnect is based on.

And it claimed that Kaiser CEO George Halvorson had preselected the HealthConnect technology, had ignored an internal Kaiser engineering analysis that accurately predicted it wouldn't work at a health care organization the size of Kaiser, and had run into similar problems with the same technology at his previous job as CEO of a smaller health plan in Minnesota, where the state attorney general eventually issued a report blaming Halvorson for high-level financial waste and abuse.

Is all this true? We don't know for sure. Halvorson insists the project supervisor, 25-year-old Justen Deal, has strung together facts but has the story wrong. Kaiser spokesmen say Dodd's departure had no connection with Deal's e-mail.

But we do know that Deal spent fruitless months going through channels — exchanging letters with Kaiser's chief compliance officer, members of Kaiser's board, Kaiser lawyers and California government officials — before sending his message to 180,000 Kaiser employees last week. Deal has published those letters and responses on a Web site, FixKP.org.

Deal is now on administrative leave. Dodd is gone. Halvorson is working to limit the PR damage.

FRANK HAYES, *Computerworld's* senior news columnist, has covered IT for more than 20 years. Contact him at **frank_hayes@computerworld.com.**

Yes, it's a mess. How it will play out in the weeks and months to come remains unknown.

But here's something to think about, something more than a little worrisome: Halvorson, Dodd and Deal are supposed to be exactly the kind of people that IT is pinning its future on.

Here's a tech-savvy CEO who takes an active interest in major IT projects, who in fact believes that IT is key to business transformation.

Here's a CIO who's a trusted adviser to the CEO, one who can deal with both technical and business barriers to a major project's success.

And here's a young, aggressive, business-savvy IT worker who sees the big picture, understands corporate politics and isn't afraid to look beyond his cubicle walls to get things done.

How many times have you heard pundits (yes, me too) tell you that we need CEOs, CIOs and IT staffers like these? That without them, IT can't gain the insight and the clout it needs to use technology for solving business problems? That these are the people who can wring real business value from IT?

Instead, these people have brought Kaiser what appear to be sweetheart deals, cover-ups and damaging publicity — and that's without yet knowing whether a failed electronic health records system really has caused Kaiser serious financial losses and put patients at risk.

For the record, I still believe IT needs people with these qualities. Not these people, maybe, and certainly not these results. Still, tech-savvy CEOs, tight-with-the-boss CIOs and business-smart IT people *are* the future of IT.

But if you think they're the prescription that will cure all your IT ills, think again. At Kaiser, at least, they've turned out to be a very bitter pill to swallow. ▸

Good Idea, but Not Quite Right

On-call pilot fish's pager wakes him up, but there's no number to call on the pager's screen – just "*******." Fish figures it's a wrong number and goes back to sleep, but for the next five hours, it's the same thing. Finally, he gets a page with a number, and when he dials in, he gets an immediate apology. Sighs fish, "It seems that when the prompt came to enter the number to dial, the user was speaking her phone number rather than pressing the keypad."

SHARK TANK

Oh, Right!

This financial company replicates its critical applications with two sets of systems at different locations on separate power grids. For a weekend disaster recovery test, one site is completely shut down to make sure everything will keep functioning. On Monday, pilot fish overhears two techs talking about the test: "It went really well – we shut down Site A and didn't get a single alert from the automated monitoring system." "Well, yes, but that's because the automated monitoring system isn't replicated, and it's hosted at Site A."

Been There, Eh?

Engineer at a remote site makes an emergency request for a Windows XP CD so he can add some features to his desktop. Support pilot fish gives him the network path to the directory with the files and ships the CD via second-day delivery – then gets called on the carpet by his boss. "Why did you send the CD second day instead of overnight?" he fumes. Fish: He has network access to the directory with all he needs to install add-on XP components. Boss: "OK, what is he going to do if it asks for the Windows CD during the install?"

D'oh!

This user's laptop won't connect to the internet. Pilot fish quickly learns why: a Trojan horse infection. "I reboot in safe mode, update all antimalware signatures, scan and remove, reboot, determine that the problem is still there, and then try several more apps and online scanners, all to no avail," says fish. "Finally, after several hours, it occurs to me to navigate to where the Trojan is saved, then move it to the Recycle Bin and empty it. Problem solved."

Not Just Yet

Traveling user is at a hotel when his laptop is stolen. "We made arrangements to have a replacement shipped to him right away," says an IT pilot fish back at headquarters. "When we notified him, he asked, 'Can you get the data off my old computer?' Yes, he meant the one that was stolen!"

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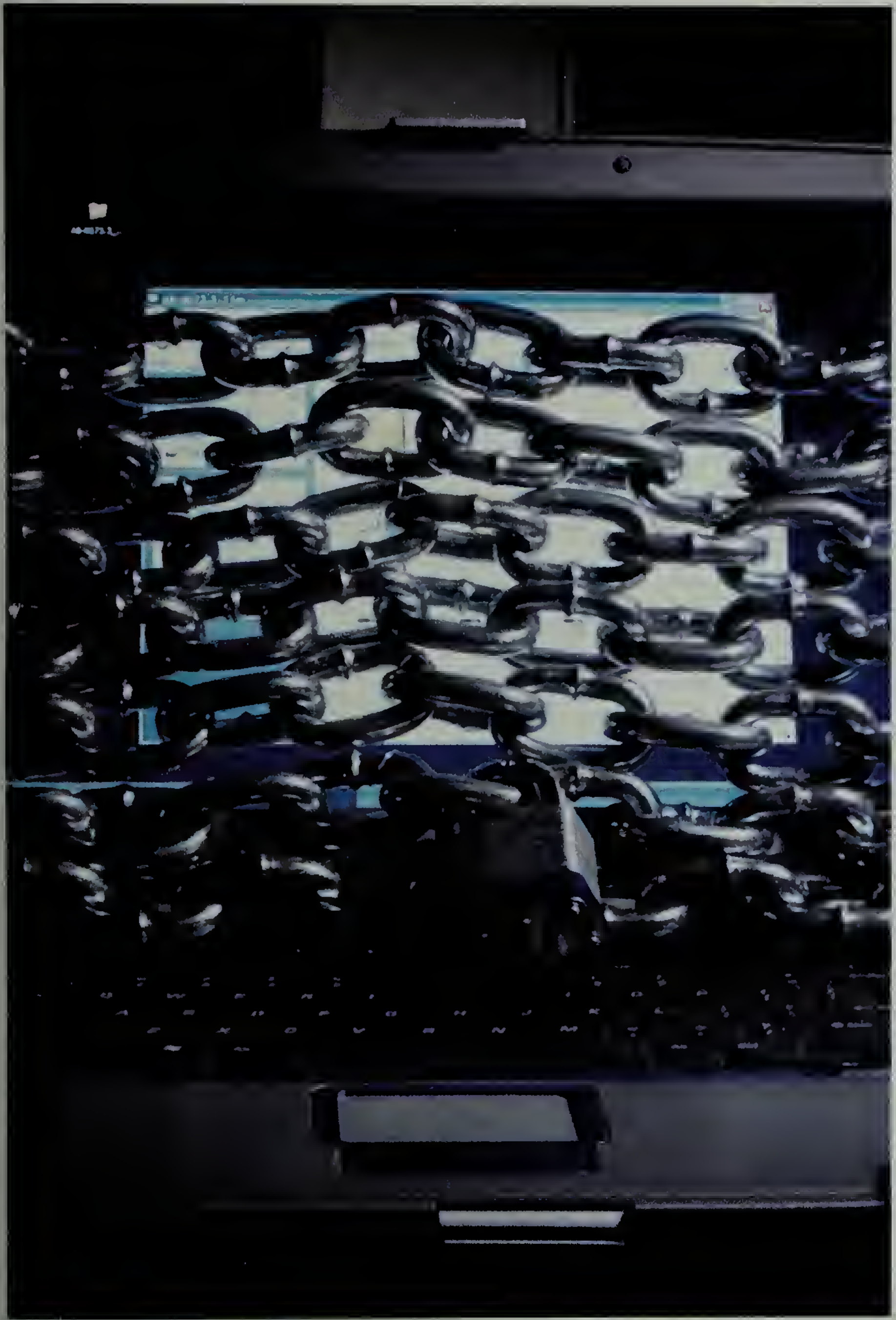

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